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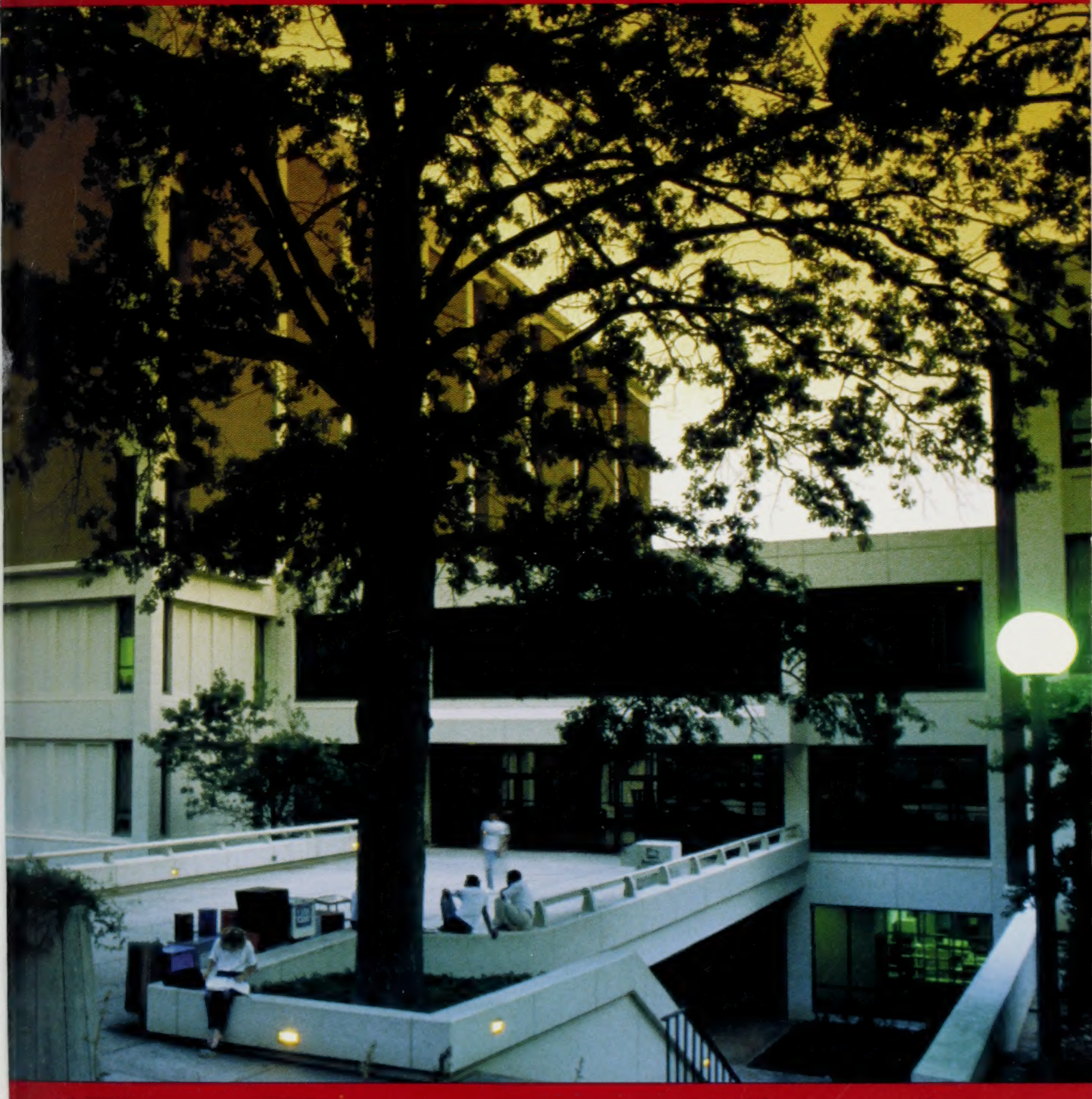
THE UNIVERSITY OF GEORGIA



GRADUATE BULLETIN 2002-2003

Directory

Note:
All numbers are in area code 706.

Graduate School:
Boyd Graduate Studies Research Center;
Graduate Admissions; 542-1787
Records & Registration Office; 542-4806
Graduation Office; 542-4803
Business Office; 542-4798

Bookstore, University:
Sanford Drive; 542-3171

Career Center:
Clark Howell Hall; 542-3375

Fees Payment:
Business Services Building; 542-1625

Financial Aid:
220 Holmes/Hunter Academic Building; 542-6147

Graduate Student Association:
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Health Service:
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217 Barrow Hall; 542-7903

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Student Activities:
Tate Student Center; 542-7774

Student Affairs, Office of the Vice President for:
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Tate Student Center:
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THE UGA GRADUATE BULLETIN 2002-2003

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Continuation of the above policies is consistent with applicable provisions of the Civil Rights Act of 1964, the Education Amendments of 1972, Executive Order 11246, Revised Order 4, the Vietnam Era Veterans Readjustment Act of 1974, the Rehabilitation Act of 1973, and The Americans with Disabilities Act of 1990, as revised and/or amended with implementing regulations. Accordingly, this institution will not discriminate in employment, admissions, programs, or services with regard to any position for which the applicant, employee , or student is qualified and will make reasonable accommodation for physical and mental limitations.

The Affirmative Action Plan implementing the above body of law, regulation, and policy is administered by Claude-Leonard Davis, Director of the UGA Equal Opportunity Office at 3 Peabody Hall, Athens, Georgia 30602-1622. Telephone inquiries concerning the Plan may be directed to (706) 542-7912. Copies of this Plan are available for inspection in the Equal Opportunity Office and in the UGA Main Library during normal weekday working hours.

While every effort is made to provide accurate and current information, the University reserves the right to change, without notice, statements in the bulletin concerning rules, policies, fees, curricula, calendar, or other matters. Students enrolled at the University agree to comply with the University's rules and regulations and to accommodate to any changes necessary. Further, the statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and the institution.

The University of Georgia: A Unit of the University System of Georgia

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Academic Calendar 2002-2003

2002 Fall Semester

Residence Halls Open	Aug. 12, M
Graduate Student Orientation	Aug. 14, W
Late Registration	Aug. 16,F
Classes Begin	Aug. 19,M
Drop/Add	Aug. 19-22, M-Th
Holiday (Labor Day)	Sept. 2, M
Midterm	Oct. 10, Th
Midpoint Withdrawal Deadline	Oct. 15, Tu
Fall Break	Oct. 31-Nov. 1, Th-F
Thanksgiving Recess	Nov. 27-29, W-F
Classes Resume	Dec. 2, M
Classes End	Dec. 9, M
Reading Day	Dec. 10, Tu
Final Exams	Dec. 11-13, 16-17, W-F, M-Tu
Commencement	Dec. 21, Sa

2003 Spring Semester

Residence Halls Open	Jan. 5, Su
Late Registration	Jan. 8, W
Classes Begin	Jan. 9, Th
Drop/Add	Jan. 9-14, Th-Tu
Holiday (MLK Day)	Jan. 20, M
Midterm	Mar. 4, Tu
Midpoint Withdrawal Deadline	Mar. 7, F
Spring Break	Mar. 17-21, M-F
Classes Resume	Mar. 24, M
Classes End	May 1, Th
Reading Day	May 2, F
Final Exams	May 5-9, M-F
Commencement	May 10, Sa

2003 Summer Semester

Pre-Summer Session (Maymester)

Note: Classes meet for 150 minutes daily, 15 days of classes

Residence Halls Open	May 11, Su
Late Registration	May 13, Tu
Classes Begin	May 14, W
Drop/Add	May 14, W
Midterm	May 23, F
Midpoint Withdrawal Deadline	May 23, F
Holiday (Memorial Day)	May 26, M
Classes End	June 4, W
Final Exams	June 5, Th

Long Session

Note: Classes meet for 60 minutes daily, 38 days of classes

Residence Halls Open	June 8, Su
Late Registration	June 11, W
Classes Begin	June 12, Th
Drop/Add	June 12-16, Th-M
Holiday	July 4, F
Midterm	July 9, W
Midpoint Withdrawal Deadline	July 11, F
Classes End	Aug. 5, Tu
Final Exams	Aug. 6-8, W-F

Short Session I

Note: Classes meet for 120 minutes daily, 19 days of classes

Residence Halls Open	June 8, Su
Late Registration	June 11, W
Classes Begin	June 12, Th
Drop/Add	June 12-16, Th-M
Midterm	June 25, W
Midpoint Withdrawal Deadline	June 25, W
Holiday	July 4, F
Classes End	July 9, W
Final Exams	July 10, Th

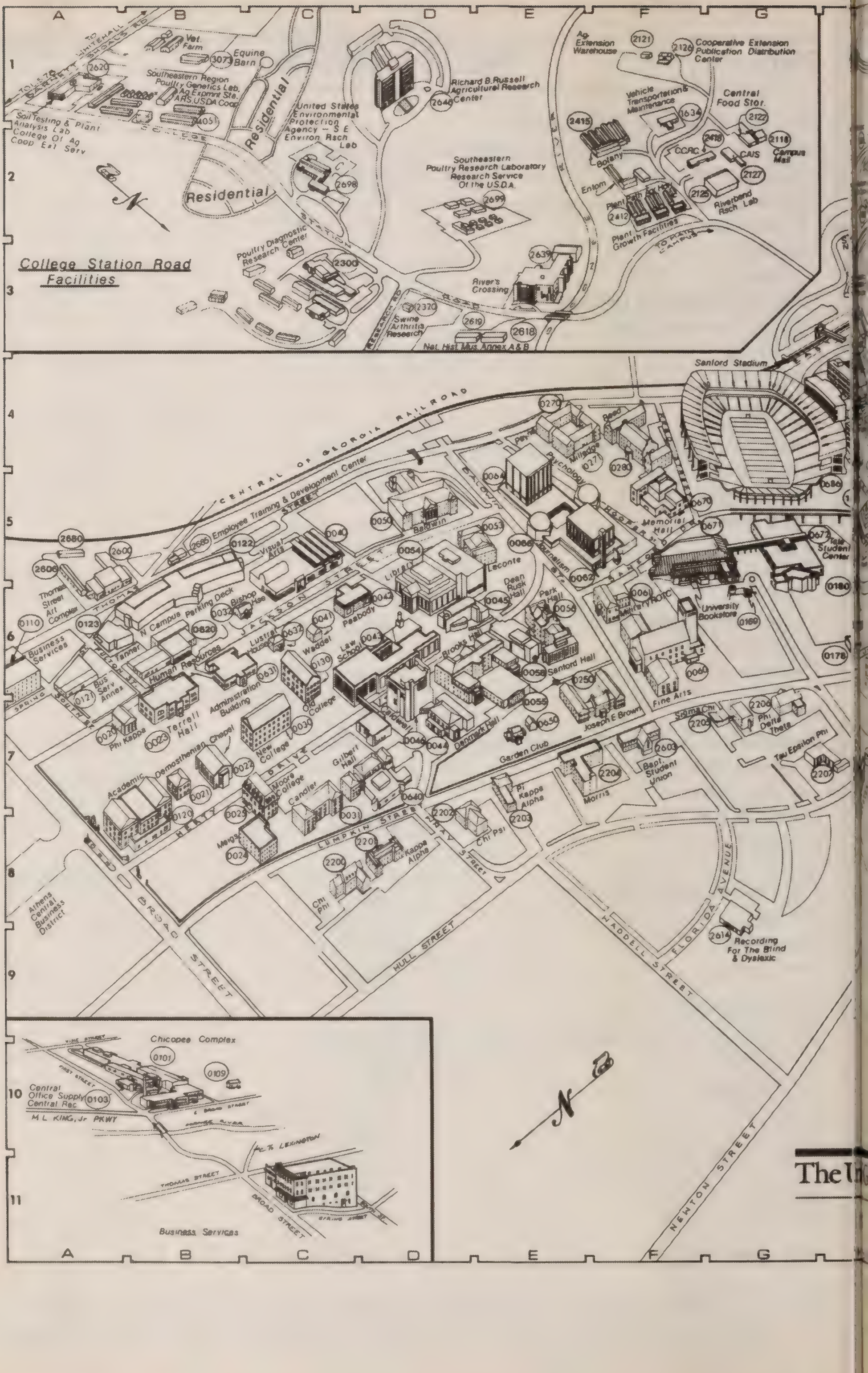
Short Session II

Note: Classes meet for 120 minutes daily, 18 days of classes

Late Registration	July 10, Th
Classes Begin	July 11, F
Drop/Add	July 11-14, F-M
Midterm	July 23, W
Midpoint Withdrawal Deadline	July 23, W
Classes End	Aug. 5, Tu
Final Exams	Aug. 6, W

Commencement **Aug. 9, Sa**

Note: This Calendar is correct as of the date of this publication. The Calendar may be subject to change during the next year. Please refer to the Schedule of Classes and/or other special announcements that may be forthcoming.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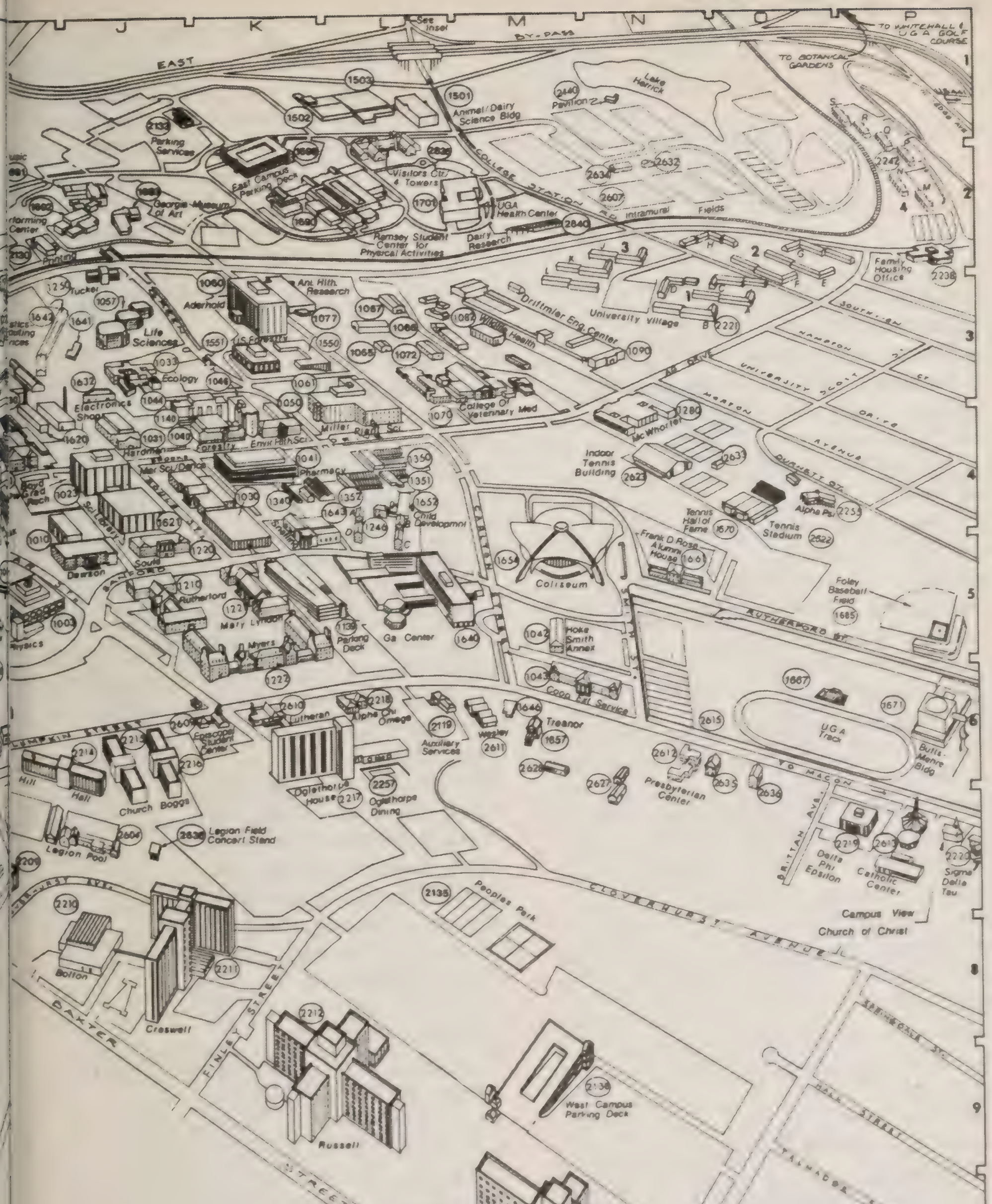
College Station Road Facilities
TO U.S. 78
BARNETT SHOALS RD
TO WHITEHALL
2620
Vet. Farm
3073 Equine Barn
Southeastern Region Poultry Genetics Lab. Ag Expmnt Sta. ARS,USDA Coop
4051
Soil Testing & Plant Analysis Lab College Of Ag Coop Ext Serv
COLLEGE
Residential
Residential
United States Environmental Protection Agency – S E Environ Rsch Lab
2698
2646 Richard B.Russell Agricultural Research Center
Southeastern Poultry Research Laboratory Research Service Of the U.S.D.A.
2699
STATION
ROAD
Poultry Diagnostic Research Center
2300
RESEARCH RD
2320 Swine Arthritis Research
2619
2618
Nat. Hist Mus Annex A & B
2639
River's Crossing
RIVER
Ag. Extension Warehouse
2121
2126 Cooperative Extension Publication Distribution Center
Vehicle Transportation & Maintenance
1634
2415
Botany
Entom
Central Food Stor.
2122
2416
CCRC
CAIS
2118 Campus Mail
2127
2125 Riverbend Rsch Lab
Plant Path
Hort
2412
Plant Growth Facilities
TO MAIN CAMPUS
Sanford Stadium
CENTRAL OF GEORGIA RAILROAD
Employee Training & Development Center
STREET
2680
2600
2685
2606
Thomas Street Art Complex
THOMAS
0122 Visual Arts
0040
0050 Baldwin
0053
0054
Library
0110
Business Services
0123
N Campus Parking Deck
0034 Bishop Hse
JACKSON STREET
0042
Peabody
0041
Waddel
0632
Lustrat House
0620
Tanner
FULTON ST.
Human Resources
0130
0043
Law School
Bus Serv Annex
0121
SOUTH ST.
SPRING
0631
Administration Building
Old College
0020
Phi Kappa
0023 Terrell Hall
0030
New College
Demosthenian
Chapel
0022
Academic
0021
Moore College
DRIVE
Gilbert Hall
Candler
0120
HERTY
0025
0031
0640
Meigs
0024
Caldwell
0046
0044
Denmark Hall
Brooks Hall
LUMPKIN STREET
2201 Kappa Alpha
2200
Chi Phi
2202
Chi Psi
2203
Pi Kappa Alpha
BROAD STREET
Athens Central Business District
HULL STREET
0270
Reed
Psychology
Milledge
0271
0280
0064
BALDWIN
HOOPER
0066
Journalism
0062
Leconte
Dean Rusk Hall
0045
Park Hall
0056
0058 Sanford Hall
0055
0650
Garden Club
0250
Joseph E Brown
0061
Military ROTC
0670
Memorial Hall
0671
SANFORD DR
University Bookstore
0169
0060
Fine Arts
0672 Tate Student Center
0180
0178
0686
Sigma Chi
2205
2206
Phi Delta Theta
Tau Epsilon Phi
2207
2603
Bapt. Student Union
2204
Morris
WADDELL STREET
FLORIDA AVENUE
2614 Recording For The Blind & Dyslexic
NEWTON STREET
Chicopee Complex
0101
0109
Central Office Supply Central Rec.
0103
VINE STREET
FIRST STREET
E BROAD STREET
M L KING, Jr PKWY
OCONEE RIVER
TO LEXINGTON
THOMAS STREET
BROAD STREET
SPRING STREET
Business Services
N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EAST
BY-PASS
TO WHITEHALL & UGA GOLF COURSE
TO BOTANICAL GARDENS
Lake Herrick
2440 Pavilion
1503
1501 Animal/Dairy Science Bldg
1502
2132 Parking Services
East Campus Parking Deck
1680
2836
Visitors Ctr/ 4 Towers
1701
UGA Health Center
1681 Georgia Museum of Art
1682
Performing Center
2130
Printing
1690
Ramsey Student Center for Physical Activities
Dairy Research
2840
COLLEGE STATION RD
Intramural Fields
2634
2632
2607
2242
Family Housing Office
2238
University Village
2221
1250 Tucker
1057
1642
1641
Life Sciences
1060 Aderhold
Ani. Hlth. Research
1077
1551
US Forestry
1550
1087
1066
1065
1072
1082
Wildlife Health
Driftmier Eng. Center
1090
1033
Ecology
1046
1632
1044
Electronics Shop
1140
1061
1050
Miller
Plant Sci
1070
College Of Veterinary Med
1620
1031
1040
Hardman
Forestry
Envir Hlth Sci
Mar Sci/Dance
1041
Pharmacy
1350
1351
1023
Boyd Grad Rsch
1030
1340
1357
1643
1652
Child Development
1246
1621
Sci Library
1010
1220
Soule
Dawson
Physics
1003
SANFORD
1210
Rutherford
1221
Mary Lyndon
Myers
1222
1139
Parking Deck
Ga Center
1640
1654
Coliseum
McWhorter
1280
Indoor Tennis Building
2623
2633
Tennis Hall of Fame
1670
Alpha Psi
2255
Tennis Stadium
2622
Frank D Rose Alumni House
1661
Foley Baseball Field
1685
1042
Hoke Smith Annex
1043
Coop Ext Service
RUTHERFORD ST
AG DRIVE
SOUTH VIEW
HAMPTON
UNIVERSITY
SCOTT
CT
MORTON
DRIVE
AVENUE
DUNNETT ST
CARLTON
1687
1671
UGA Track
Butts-Mehre Bldg
2615
1646
Treanor
1657
2611 Wesley
2119
Auxiliary Services
2610
Lutheran
2218
Alpha Chi Omega
2609
Episcopal Student Center
LUMPKIN STREET
2214
2215
2216
Hill
Hall
Church
Boggs
Oglethorpe House
2217
2257
Oglethorpe Dining
2604
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Presbyterian Center
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TO MACON
BRITTAN AVE.
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2220
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Campus View Church of Christ
2135
Peoples Park
CLOVERHURST AVENUE
2210
Bolton
2211
Creswell
BAXTER
FINLEY STREET
2212
Russell
2136
West Campus Parking Deck
2213
Brumby
STREET
CHURCH STREET
SEMINOLE ST.
HALL STREET
TALMADGE STREET
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Philip O'Neal
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Morris Hall/2204, 7-E
Myers Hall/1222, 5-K
Myers Quadrangle/1223, 5-K
New College/0030, 7-C
Oglethorpe House/2217, 6-K
Old College/0130, 6-C
Park Hall/0056, 6-E
Parking Deck, East Campus/1698, 2-K
Parking Deck, North Campus/0122, 6-B
Parking Deck, South Campus/1139, 5-K
Parking Deck, West Campus/2136, 1-K
Parking Services/2133, 2-J
Payne Hall/0270, 4-E
Peabody Hall/0042, 6-C
People's Park/2135, 8-M
Performing Arts Center/1692, 2-J
Phi Delta Theta Fraternity/2206, 7-G
Phi Kappa Hall/0020, 7-A
Physical Education/1030, 4-J
Physics/1003, 5-I
Pi Kappa Alpha Fraternity/2203, 7-E
Poultry Diagnostic and Research Ctr./2300, 3-C
Poultry Science/1013, 4-H
Practice Field/2615, 6-N
Presbyterian Student Center/2612, 6-N
Psychology/0064, 5-E
Public Safety/0180, 6-G
Ramsey Student Center for Physical Activities/1690, 2-K
Recording for the Blind and Dyslexic/2614, 8-G
Reed Hall/0280, 4-F
Riverbend Research Lab/2125, 2-F
River's Crossing/2639, 3-E
Russell Hall/2212, 9-K
Russell Research Center/2646, 1-D
Rutherford Hall/1210, 5-J
Sanford Hall/0058, 6-E
Sanford Stadium/0686, 4-G
School of Music/1691, 2-J
SE Environmental Research Lab/2698, 2-C
SE Poultry Research Lab/2699, 2-E
SE Region Poultry Genetics Lab/4051, 1-B
Sigma Chi Fraternity/2205, 7-G
Sigma Delta Tau Sorority/2220, 7-P
Sigma Nu Fraternity/2237, 3-H
Snelling Hall/1643, 4-K
Soule Hall/1220, 5-J
Statistics-Computing Services/1130, 3-I
Stegeman Coliseum/1654, 5-M
Swine Arthritis Research/2320, 3-D
Tanner Building/0123, 6-B
Tate Student Center/0672, 5-G
Tau Epsilon Phi Fraternity/2207, 7-G
Tennis Courts-Indoor/2623, 4-N
Tennis Hall of Fame/1670, 4-0
Terrell Hall/0023, 7-B
Thomas Street, South/2600, 5-A
Thomas Street Art Studio/2606, 5-A
Training and Development Center/2685, 5-B
Treanor House/1657, 6-M
Tucker Hall/1250, 2-J
U.S. Forest Service/1550, 3-K
U.S. Forest Service Annex/1551, 3-K
UGA Golf Course/2650, 1-P
UGA Health Center/1701, 2-L
University Bookstore/0671, 5-F
Veterinary Medicine Complex/1070, 3-M
Visitors and Information Center/2835, 2-L
Visual Arts/0040, 5-C
Waddel Hall/0041, 6-C
Wesley Foundation/2611, 6-M
Wildlife Health/1082, 3-M
Wilson Pharmacy/1041, 4-K
Wray-Nicholson House/9-E

The University System of Georgia

The University System of Georgia includes 34 state-sponsored, public institutions located throughout Georgiañ19 universities and 15 two-year colleges.

A 16-member constitutional Board of Regents one from each of the state's 11 Congressional Districts and five from the state-at-large governs the University System, which was established in 1931. Board members are appointed by the Governor, subject to state senate confirmation, for seven-year terms. The Chairperson, the Vice Chairperson, and other officers of the Board are elected by its membership. The Chancellor, who is not a Board member, is the chief executive officer of the Board and chief administrative officer of the University System.

The overall programs and services of the University System are offered through three major components: Instruction, Public Service/Continuing Education, Research.

Board of Regents' policies for government, management, and control of the University System and the Chancellor's administrative actions provide institutions a high degree of autonomy. The President is the executive head of each institution and is recommended by the Chancellor and appointed by the Board.

The University System Advisory Council, with 34 committees, engenders continual dialogue on major academic and administrative matters and makes recommendations to the Chancellor, who transmits them to the Board as appropriate, regarding academic and administrative operations in the System. The Council consists of the Chancellor, the Vice Chancellor, and all Presidents as voting members. It includes other officials of institutions as nonvoting members. The Council's 21 academic and 13 administrative committees are composed of institutional representatives, typically one from each unit, and deal with matters of System-wide application.

In-state tuition and out-of-state tuition for students at all institutions are established by the Board of Regents. All students pay in-state tuition while out-of-state students pay out-of-state tuition in addition. Other fees for student services and activities are established by institutions, subject to Board of Regents' approval. Non-mandatory fees established by institutions are subject to approval of the Board of Regents' office.

Institutions of the University System of Georgia

Comprehensive and Special Purpose Universities

Athens
  The University of Georgia
Atlanta
  Georgia Institute of Technology
  Georgia State University
Augusta
  Medical College of Georgia

State and Regional Universities

Albany
  Albany State University
Americus
  Georgia Southwestern State University
Augusta
  Augusta State University
Carrollton
  State University of West Georgia
Columbus
  Columbus State University
Dahlonega
  North Georgia College and State University
Fort Valley
  Fort Valley State University
Marietta
  Kennesaw State University
  Southern Polytechnic State University
Milledgeville
  Georgia College and State University
Morrow
  Clayton College and State University
Savannah
  Armstrong Atlantic State University
  Savannah State University
Statesboro
  Georgia Southern University
Valdosta
  Valdosta State University

Two-Year Colleges

Albany
  Darton State College
Atlanta
  Atlanta Metropolitan College
Bainbridge
  Bainbridge College
Barnesville
  Gordon College
Brunswick
  Coastal Georgia Community College
Cochran
  Middle Georgia College
Dalton
  Dalton College
Decatur
  Georgia Perimeter College
Douglas
  South Georgia College
Gainesville
  Gainesville College
Macon
  Macon College
Rome
  Floyd College
Swainsboro
  East Georgia College
Tifton
  Abraham Baldwin Agricultural College
Waycross
  Waycross College

University System of Georgia
244 Washington Street, SW
Atlanta, Georgia 30334-1450

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The University of Georgia

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www.uga.edu/presofc

Interim Senior Vice President for Academic Affairs and Provost
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www.uga.edu/vpaa

Senior Vice President for Finance and Administration
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Senior Vice President for External Affairs (Acting)
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Mark Lusk
Telephone: 706-542-7903
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Colleges and Schools

College of Arts and Sciences (1801)
Wyatt W. Anderson, *Dean*
College of Agricultural and Environmental Sciences (1859)
Gale A. Buchanan, *Dean*
School of Law (1859)
David E. Shipley, *Dean*
College of Pharmacy (1903)
Svein Øie, *Dean*
Daniel B. Warnell School of Forest Resources (1906)
Arnett C. Mace, Jr., *Dean*
College of Education (1908)
Louis A. Castenell, Jr., *Dean*
Graduate School (1910)
Maureen Grasso, *Dean*
C. Herman and Mary Virginia Terry College of Business (1912)
J.M. Tull School of Accounting (1977)
P. George Benson, *Dean*
Henry W. Grady College of Journalism and Mass Communication (1915)
John Soloski, *Dean*
College of Family and Consumer Sciences (1933)
Sharon Y. Nickols, *Dean*
College of Veterinary Medicine (1946)
Keith W. Prasse, *Dean*
School of Social Work (1964)
Bonnie L. Yegidis, Dean
School of Environment and Design (2001)
John Francis Crowley, III, *Dean*
School of Public and International Affairs (2001)
Thomas P. Lauth, *Dean*

Administrative Officers of the Graduate School (1910)

Maureen Grasso, B.S., M.S., Ph.D., *Dean*
Thomas W. Hodler, B.S., M.A.T., Ph.D., *Associate Dean*
Janet A. Sandor, B.A., B.S.Ed., M.Ed., Ph.D., *Director of Graduate Admissions*
Krista Haynes, A.B., *Graduate Program Administrator*
Curtis D. Byrd, B.S., M.Ed., *Director, Recruitment and Retention*

GENERAL UNIVERSITY INFORMATION

General University Information

History

The University of Georgia

When the University of Georgia was incorporated by an act of the General Assembly on January 27, 1785, Georgia became the first state to charter a state-supported university. In 1784 the General Assembly had set aside 40,000 acres of land to endow a college or seminary of learning.

At the first meeting of the board of trustees, held in Augusta on February 13, 1786, Abraham Baldwin was selected president of the University. Baldwin, a native of Connecticut and a graduate of Yale University who had come to Georgia in 1784, drafted the charter adopted by the General Assembly.

The University was actually established in 1801 when a committee of the board of trustees selected a land site. John Milledge, later a governor of the state, purchased and gave to the board of trustees the chosen tract of 633 acres on the banks of the Oconee River in northeast Georgia.

Josiah Meigs was named president of the University and work was begun on the first building, originally called Franklin College in honor of Benjamin Franklin and now known as Old College. The University graduated its first class in 1804.

The curriculum of traditional classical studies was broadened in 1843 to include courses in law, and again in 1872 when the University received federal funds for instruction in agriculture and mechanical arts.

Fourteen schools and colleges, with auxiliary divisions, carry on the University's programs of teaching, research and service. These colleges and schools and the dates of their establishment as separate administrative units are: Franklin College of Arts and Sciences, 1801; College of Agricultural and Environmental Sciences, 1859; School of Law, 1859; College of Pharmacy, 1903; D. B. Warnell School of Forest Resources, 1906; College of Education, 1908; Graduate School, 1910; C. Herman and Mary Virginia Terry College of Business, 1912; Henry W. Grady College of Journalism and Mass Communication, 1915; College of Family and Consumer Sciences, 1933; College of Veterinary Medicine, 1946; School of Social Work, 1964; School of Environmental Design, 1969; School of Public and International Affairs (2001). The Division of General Extension, now the Georgia Center for Continuing Education, was incorporated into the University in 1947.

In 1931 the General Assembly of Georgia placed all state-supported institutions of higher education, including The University of Georgia, under the jurisdiction of a single board. This organization, known as the University System of Georgia, is governed by the Board of Regents. The Board of Regents' executive officer, the chancellor, exercises a general supervisory control over all institutions of the University System, with each institution having its own executive officers and faculty.

The Graduate School

Prior to the formal establishment of the Graduate School, courses of postgraduate status were offered under the control of a faculty committee on graduate studies. In 1910, the formal organization of graduate studies into a Graduate School was authorized. Dr. Willis H. Bocock served as the Graduate School's first dean and was succeeded by R. P. Stephens, George H. Boyd, Gerald B. Huff, Thomas H. Whitehead, Hardy M. Edwards, Jr., John C. Dowling, Gordhan L. Patel, and the present dean, Maureen Grasso.

The Graduate School coordinates the graduate programs of all schools and colleges of the University. Matters of policy and procedure are determined by the graduate faculty through the graduate council. The graduate faculty consists of faculty members appointed by the President on the basis of productive research, effective teaching, and other creative activities. The policies adopted by the graduate council are administered by the dean of the Graduate School.

The traditional degrees, Master of Arts and Master of Science, are offered in 27 and 42 disciplines, respectively. The Doctor of Philosophy degree is offered in 76 disciplines. The University also offers professional master's degrees in 25 areas, the Specialist in Education degree in 21 fields, and professional doctoral degrees in education, music, and public administration.

Mission

The University of Georgia, a land-grant and sea-grant university with state-wide commitments and responsibilities, is the state's oldest, most comprehensive, and most diversified institution of higher education. Its motto, "to teach, to serve, and to inquire into the nature of things," reflects the University's integral and unique role in the conservation and enhancement of state's and nation's intellectual, cultural, and environmental heritage.

The University of Georgia shares with the other research universities of the University System of Georgia the following core characteristics:

1. a statewide responsibility and commitment to excellence and academic achievements having national and international recognition;
2. a commitment to excellence in a teaching/learning environment dedicated to serve a diverse and well-prepared study body, to promote high levels of student achievement, and to provide appropriate academic support services;
3. a commitment to excellence in research, scholarship, and creative endeavors that are focused on organized programs to create, maintain, and apply new knowledge and theories; that promote instructional quality and effectiveness; and that enhance institutionally relevant faculty qualifications;
4. a commitment to excellence in public service, economic development, and technical assistance activities designed to address the strategic needs of the State of Georgia along with a comprehensive offering of continuing education designed to meet the needs of Georgia's citizens in life-long learning and professional education;
5. a wide range of academic and professional programming at the baccalaureate, master's and doctoral levels.

With its statewide mission and core characteristics, the University of Georgia endeavors to prepare the University community and the state for full participation in the global society of the twenty-first century. Through its programs and practices, it seeks to foster the understanding of and respect for cultural differences necessary for an enlightened and educated citizenry. It further provides for cultural, ethnic, gender, and racial diversity in the faculty, staff, and student body. The University is committed to preparing the University community to appreciate the critical importance of a quality environment to an interdependent global society.

As a comprehensive land-grant and sea-grant institution, the University of Georgia offers baccalaureate, master's, doctoral and professional degrees in the arts, humanities, social sciences, biological sciences, physical sciences, agricultural and environmental sciences, business, education, environmental design, family and consumer sciences, forest resources, journalism and mass communication, law, pharmacy, social work, and veterinary medicine.

The University attracts students nationally and internationally as well as from within Georgia. It offers the state's broadest array of possibilities in graduate and professional education, and thus a large minority of the student body is post-baccalaureate. The predominantly Georgian undergraduate student body is a mix of highly qualified students originally admitted as freshmen and selected transfer students principally from other University System institutions.

With original scholarship, basic and applied research, and creative activities constituting an essential core from which to draw, the impact of the land-grant and sea-grant mission is reflected throughout the state. Cooperative extension, continuing education, public service, experiment stations, and technology transfer are all designed to enhance the well-being of the citizens of Georgia through their roles in economic, social, and community development.

As it has been historically, the University of Georgia is responsive to the evolution of the state's educational, social, and economic needs. It aspires through its strategic planning to even closer contact and interaction with public and private institutions throughout the state as well as with the citizens it serves.

Accreditation

The University of Georgia is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor's, master's, the Specialist in Education, and doctoral degrees. In addition, a number of the University's 13 colleges and schools are further accredited by appropriate educational associations

Admission

Correspondence concerning admission to the Graduate School should be addressed to the Office of Graduate Admissions, The University of Georgia, Athens, Georgia 30602-7402, email: gradadm@uga.edu or www.gradsch.uga.edu/admissions/. Inquiries about facilities for advanced study and research, programs of study, and specific departmental requirements should be addressed to the appropriate department.

Persons holding a bachelor's degree from any institution accredited by the appropriate regional accrediting association are eligible to apply for admission to the Graduate School. Applicants should have ranked in the upper half of their undergraduate class and should have completed the equivalent of an undergraduate major in the field in which they propose to study. Graduates of international institutions must hold a degree equivalent to an American bachelor's degree; it must be awarded by an institution which is recognized by the appropriate agency of the country.

Applicants are responsible for providing all application materials required for admission. These items include but are not limited to: the general application for admission, the application-processing fee, official transcripts from each institution attended, official entrance test scores, and any supplemental material, including letters of recommendation, that are required by the department. The application-processing fee is non-refundable and will not be credited toward tuition. Materials submitted in support of an application will not be returned.

Applicants are encouraged to apply on-line. An internet link to the application forms can be found on the Graduate School Website at www.gradsch.uga.edu/admissions/.

Applicants are encouraged to contact the academic department about expected semester of matriculation; some departments admit students only for Fall semester.

Applications and supporting credentials from domestic students must be received in the Office of Graduate Admissions by the following deadlines: Fall semester, July 1; Spring semester, November 15; Summer semester (pre-session), April 1; and Summer semester (all other sessions), May 1. Applicants are urged to apply as early as possible up to one year in advance of the desired matriculation date. All applicants should consult with the graduate coordinator of the specific program for which they are making application to ascertain if the program adheres to an earlier application deadline. For information concerning deadlines for international applications, refer to the section entitled International Applicants.

Each completed application, with supporting materials, is forwarded to the department in which the applicant proposes to study, where it is considered by the faculty of that department. No applicant will be admitted without the recommendation of an academic unit. Departmental recommendations for admission are forwarded to the Graduate School after careful consideration of the entire admissions application. Final consideration is given by the dean of the Graduate School.

An applicant is admitted for a specific semester. Applicants may not register unless they have been notified of their acceptance to the Graduate School by the Office of Graduate Admissions. Admission is valid only when the person registers for the specified semester. Applicants may contact the Office of Graduate Admissions for information on reapplying or deferring applications to future semesters. Deferred or resubmitted applications are reconsidered for admissions decisions by the academic departments.

Admission from Baccalaureate to Doctoral Programs

Select departments will consider admission to doctoral programs of study from applicants holding only the baccalaureate degree. Inquiries concerning such admission should be directed to the appropriate academic department.

Application Fee

The application-processing fee is collected to help offset the cost of processing application materials; it is non-refundable and cannot be deferred or credited toward tuition. The fee is $50.00 for all applicants except for recent University of Georgia graduate students who may qualify for a reduced application fee, as follows. University of Georgia graduate students who are applying for new admission or readmission to enroll within four semesters (including summer semester) of their last semester of UGA graduate enrollment may pay the reduced application-processing fee of $25.00. Prior University of Georgia graduate students who apply for admission or readmission to enroll more than four semesters after their last semester of enrollment must submit the regular $50.00 application-processing fee.

Entrance Tests

Entrance test scores appropriate for each application must be sent to the Office of Graduate Admissions directly by the responsible testing agency. All test scores except the TOEFL are subject to a five-year time limitation. Scores from the Test of English as Foreign Language (TOEFL), required of applicants whose native language is not English, are subject to a two-year time limit.

Scores on the verbal and quantitative sections of the General Test of the Graduate Record Examinations (GRE) are required for admission as a prospective candidate for most graduate degrees. The Miller Analogies Test (MAT) may be used in lieu of scores on the GRE for admission to some Master of Education and Specialist in Education degree programs. The GMAT is required for applicants seeking admission as prospective candidates for the Master of Business Administration and the Master of Accountancy degrees. Applicants for the Master of Marketing Research and Master of Internet Technology degrees may submit either the GMAT or the GRE. The Master of Arts and Doctor of Philosophy programs in business administration accept the GMAT or the GRE. The Master of Arts and Doctor of Philosophy programs in economics require the GRE. Either the GRE or GMAT may be submitted in support of the MA in journalism and mass communication, the Master of Mass Communication (MMC), and PhD in mass communication. In all cases, applicants should consult the departments for information about specific test score requirements. Applicants who have been admitted previously to a degree program and earned credit toward that degree at the University of Georgia may submit the same test scores in support of an application for a new degree program. In this case, the scores are not subject to the five-year time limit.

The Graduate Record Examinations and the Graduate Management Admission Test are offered at numerous testing centers in the United States and abroad. Advance registration is required. Registration forms and detailed information on the availability and character of each examination may be obtained by writing to the Educational Testing Service, Princeton, New Jersey 08541-6000 or at the following web address: www.ets.org. The Miller Analogies Test is given at various colleges and universities as approved by The Psychological Corporation. For information concerning the test as given at the University of Georgia, contact the Counseling and Testing Center, Clark Howell Hall, (706) 542-3183. For information concerning other approved testing centers, contact The Psychological Corporation, 555 Academic Court, San Antonio, Texas 78204-2498.

Retention of Records

Applications and supporting documents for those who were denied admission, who were accepted but failed to matriculate, or who did not complete the application procedure are retained in the Office of Graduate Admissions for a period of one year, after which they are discarded.

Applications submitted without the application fee are not processed. Such applications are retained for one year. Transcripts, test scores, and any other information submitted without an application are retained for a period of one year.

Immunization Requirements

All new students attending University System of Georgia institutions must show proof of immunization for measles, mumps, and rubella. Immunity may be verified by proof of (a) having had the disease, (b) having had the required immunizations, or (c) having had laboratory evidence of immune titer. In compliance with this policy, all new students must complete a University Health Center Report of Medical History form which will be sent by the Office of Graduate Admissions at the time of acceptance. This form should be returned to the University Health Center at least two weeks prior to registration. Questions related to the certificate of immunization and/or the immunization policy should be directed to: The Medical Records Department, University Health Center, The University of Georgia, Athens, GA 30602-1755; telephone (706) 542-8617.

International Applicants

Several months may be required to process an application from abroad; therefore, foreign nationals are urged to submit complete application materials as early as possible, but no more than one year in advance. The application must include the application form, two official transcripts (including proof of degree where applicable) from all colleges and universities attended, an official score report on an approved entrance test, a non-refundable application fee, and three letters of recommendation. If the original language of the academic record is not English, a certified English translation must accompany the official documents. Recommendations from teachers who are familiar with higher education programs in the United States are advantageous. International applicants, for whom English is not their native language, must submit Test of English as a Foreign Language (TOEFL) scores in addition to scores on an approved entrance examination. The application of a student from abroad, complete with supporting materials, must be in the Office of Graduate Admissions by the following deadlines: Fall semester, April 15; Spring semester, October 15; Summer semester (all sessions), February 15. Departments may have earlier application deadlines which take precedence over those established by the Graduate School. Applicants should consult the departments for their specific deadlines.

Application for Readmission

A student who has been out of school more than three semesters, including the Summer semester, and wishes to return for the same admission classification and major must submit an application for readmission to the Office of Graduate Admissions. The appropriate application-processing fee is required for all applications. Note: A student who has not enrolled during the previous six years must submit an application for admission.

A student who has completed a graduate degree, and is applying for a second graduate degree, must submit an application for admission to the Office of Graduate Admissions.

A student who is not currently enrolled and wishes to apply for a degree program different from that for which originally admitted must submit an application for admission to the Office of Graduate Admissions.

A currently enrolled student applying for a second graduate degree must submit an application for admission to the Office of Graduate Admissions.

Applications for admission or readmission must be submitted by the established deadlines.

Change of Degree Objective

A student wishing to change his or her degree objective may do so with the approval of the departmental graduate coordinator and the dean of the Graduate School. A form requesting a change in degree objective may be submitted to the Graduate School if a student has registration eligibility and is 1) changing from provisional admission status to the status of a prospective candidate for a degree within the same department; 2) changing from one degree objective to another degree objective within the same department; and/or 3) changing from one major to another within the same department.

A nondegree student or a transient student is not eligible to request a change of degree objective and must apply for admission to be considered for a graduate degree program. A currently enrolled student wishing to change from one degree and department/college to another degree and department/college must apply for admission to the new department/college.

Classification of Graduate Students

At the discretion of individual schools or departments and with the approval of the dean of the Graduate School, applicants may be considered for admission to one of the following classifications:

1. Prospective candidate for a degree. Applicants who meet all requirements for admission to a degree program may apply as prospective candidates for a graduate degree. Applicants must submit the following to the Office of Graduate Admissions: the general application for admission, the application-processing fee, two official copies of transcripts from each institution attended, except the University of Georgia, and official entrance test scores sent directly from the testing agency. If English is not the native language of the applicant, official TOEFL scores must also be submitted. Applicants also must submit three letters of recommendation directly to the department to which they are applying, as well as any supplemental information required by the department. Applicants are responsible for contacting the departmental graduate coordinator for information regarding any special requirements and any supplemental material which may be needed.

Applicants who are missing an official document or test scores may be admitted provisionally to a degree program, if recommended by the department and approved by the graduate dean. The conditions of the provisional admission must be satisfied by the end of the first semester of enrollment.

2. Nondegree (ND). Applicants who do not intend to pursue a degree but who wish to take courses for professional advancement, licensure, or certification purposes, and who hold a baccalaureate degree or higher degree from a regionally accredited institution, should apply for nondegree status. Applicants must submit the following to the Office of Graduate Admissions: the general application for admission, the application-processing fee, two official copies of transcripts from the institution which awarded the highest degree, and a statement of purpose. If English is not the native language of the applicant, official TOEFL scores must also be submitted. Applicants are responsible for contacting the departmental graduate coordinator for information regarding any special requirements or supplemental material which may be needed.

Nondegree students who are later admitted as prospective degree candidates may apply course work taken in nondegree status toward a graduate degree program, subject to the approval of the major professor, the departmental graduate coordinator, and the dean of the Graduate School.

3. Graduate Transient (TRANS). Transient admission may be granted to students in good standing at regionally accredited graduate schools who wish to enroll for one semester at the University of Georgia. Applicants requesting this status must submit the following to the Office of Graduate Admissions: the general application for admission, the application-processing fee, and certification of graduate standing in a regionally accredited institution. Additional information may be required by departments for admission to this classification; therefore, applicants should contact the appropriate department. Students admitted in this classification who later wish to enroll as prospective candidates for a degree must make formal application to the Graduate School as described in item 1 above.

Admission and Registration of Persons 62 Years of Age or Older

According to the provisions of an amendment to the Constitution of the State of Georgia, senior citizens who are residents of Georgia now have access to institutional services available through University System units at reduced cost. The rules adopted by the Board of Regents regarding admission and registration of persons 62 years of age or older in units of the University System are listed below:

1. Current or prospective students must be residents of Georgia, 62 years of age or older at the time of registration, and must present a birth certificate or other comparable written documentation of age to enable the registrar to determine eligibility.

2. Persons who have been accepted through regular admission procedures may enroll as regular students in courses offered for resident

credit on a space available basis without payment of fees, other than supply, laboratory, shop, and transportation charges.

3. Prospective students must meet all system and institutional admission requirements to include official transcripts of all high school and/or college credit; entrance test scores, i.e., SAT, GRE, GMAT, etc.; letters of recommendation, and/or other materials as may be required.

4. Students will be provided access to all services available at any particular system unit which are applicable to the creation and maintenance of student and institutional records.

5. All degree-seeking students must meet all system, institutional, and legislated degree requirements such as the Regents' Test, major area examinations, preliminary and final oral and/or written examinations, and acceptable theses or dissertations.

6. Students may not enroll in dental, medical, veterinary, or law schools under the provisions of this policy.

Registration

A graduate student using University facilities and/or staff time must register for a minimum of three hours of credit each semester. A student who holds an assistantship must register for a minimum of twelve hours of credit fall and spring semesters and nine hours of credit during the summer semester.

Complete registration instructions are included in the University of Georgia Schedule of Classes for each semester. The Schedule of Classes is available in the Office of the Registrar, departmental offices, and deans' offices the first week of the semester preceding the semester the student plans to register.

Course Load

A full-time course load is nine hours per semester during the academic year and six hours during the summer semester. The maximum semester course load for any student is 18 hours per semester. For those students whose degree program officially requires more than 18 hours of credit per semester, the students will be limited to the program maximum. The minimum/maximum course load for which a graduate student may enroll is governed by the following:

	Minimum (Sem Hours)	Maximum (Sem Hours)
Students who do not have an assistantship	3	18
Graduate Assistants:		
One-fourth (.25) time	9	18
One-third (.33) time	12	18
Four-ninths (.44) time	12	18
One-half (.50) time	12	18

To exceed the maximum course load, a student must obtain approval from his/her major professor and the dean of the Graduate School. The department head or the departmental graduate coordinator may sign the overload request in the absence of the student's major professor.

Generally, a request to exceed the maximum course load will not be approved unless the student satisfies the following guidelines: (1) is a prospective candidate (or candidate) for a graduate degree, (2) has a cumulative graduate average of 3.5 or higher, (3) has no incompletes on his/her graduate record, and (4) is not a first-semester student.

The maximum course load for an eight-week summer thru session is 18 hours. The minimum course load for any summer session is 3 hours. The maximum course load during pre-summer session (Maymester) is 6 hours. For students on an assistantship, the minimum course load during summer sessions is 9 hours. Permission to exceed the maximum course load is not granted during the summer semester.

Course Numbers

Courses numbered 8000-9999, taught by members of the graduate faculty, are advanced graduate courses and seminars which provide educational experiences at the highest level in a graduate student's program of study. Courses numbered 6000-6999 are fundamental knowledge courses; those numbered 7000-7999, except master's research (7000) and thesis (7300), are technique and professional courses. Courses numbered 6000-7999 are normally taken early in the graduate student's program of study. Joint undergraduate/graduate courses, numbered 4000-4999/6000-6999 and 5000-5999/ 7000-7999, in which undergraduate and graduate students are simultaneously enrolled are not normally used to provide the core requirements of a graduate degree program. Such courses may be used as electives and as service courses taken in other departments.

Class Attendance

Students are expected to attend classes regularly. A student who incurs an excessive number of absences may be withdrawn from a class at the discretion of the professor.

Withdrawal from Courses

Students who wish to withdraw from a course after the designated drop/add period for a term should initiate the withdrawal procedure with the instructional department and their advisor. Instructors who wish to withdraw a student from a course because of excessive absences should initiate the withdrawal procedure within the instructional department. (The term "excessive absences" is defined in the syllabus for the course.) A student who fails to drop a course during the drop/add period for the term may withdraw from the course through the OASIS system. The system will notify the instructor of the course, who will assign a grade of W or WF. No refund for a reduction in hours due to individual course withdrawals is authorized. Only credit hour reductions effected by the drop/add process will generate a refund.

Students who withdraw from a course should be aware of the fact that a reduction in their course load because of withdrawal may affect their assistantship, financial aid, athletic eligibility, and/or full-time student status. Students should contact the appropriate office if they have questions about the impact of their withdrawal from a course.

A graduate student who withdraws from a course or is withdrawn by the instructor for excessive absences prior to the midpoint of a semester is assigned a grade of W or WF by the instructor. A student who withdraws or is withdrawn for excessive absences after the midpoint of the semester (date to be specified in the Schedule of Classes) is assigned a grade of WF, except in those cases in which the student is doing satisfactory work and the withdrawal is recommended by the Office of Student Affairs because of emergency or health reasons.

A grade of W signifies that the student was passing the course at the time of withdrawal. Such a grade, even if the course was withdrawn from for medical reasons, does not relieve the student from the regular probation.

Course Deletions

A course deletion refers to an administrative process whereby the course is removed from the student's record after the designated drop/add period and, if appropriate, a refund is generated. In order to have a course deleted from the student's record, it must be determined that the University is responsible for the student being in the course in error.

Course deletion requires a written student petition followed by the review and approval of the instructor of the course, the department head/program director, and the dean. Questions concerning course deletion should be directed to the dean's office of the student's school or college.

Change in Grades

A grade in a course recorded by the Registrar cannot be changed except in the following circumstances:

A symbol of I not removed after three semesters becomes an F. Once a grade of Incomplete (I) converts to an F, it remains an F.

A symbol of ER not removed after one semester becomes a grade of WF.

Any grade will be changed upon a written statement by the instructor that the grade was a factual error. All grade changes are subject to approval by the instructor's department head and the dean of the Graduate School.

No grade change can take place in any course after three semesters from the original issuance of the grade.

Name and Address Changes

The name carried on the permanent academic record is the name given on the application for admission and should be the complete legal name. The name will be changed by the Registrar upon request to reflect legal name changes. Changes in a current or permanent address can be made in the OASIS system until the student's graduation semester. If the OASIS system will not accept an address change, the student must notify the Office of the Registrar to make the change.

Grade Reporting System

The grade scale for graduate students is as follows:

A Excellent
B Good
C Satisfactory
D Passing
F Failure

WF This designation indicates that the student was permitted to withdraw from a course while doing unsatisfactory work or withdrew after the midpoint of the grading period. The withdrawing of a course under these circumstances is equivalent to a failure. The symbol W will be assigned for withdrawals after the midpoint of a grading period in cases of a hardship. A determination that a hardship exists must be made by the Office of the Vice President for Student Affairs and communicated to the Graduate School.

S This symbol indicates that credit has been given for completion of degree requirements other than academic course work. The grade of S must be assigned in thesis and dissertation courses (7300, 9300), where student performance or progress is satisfactory. The use of this symbol is approved for seminars, applied projects, problems, internships, practicums, and research courses. Credit earned with an S grade will become part of cumulative hours earned, but the grade will not be included in the calculation of academic averages.

U This symbol indicates unsatisfactory performance or progress in an attempt to complete degree requirements other than academic course work. The grade of U must be assigned in thesis and dissertation courses (7300, 9300), where student performance or progress is unsatisfactory. The use of this symbol has been approved for seminars, applied projects, problems, internships, practicums, and research courses. No credit is earned by a U grade. The grade is not included in the calculation of academic averages.

Once earned and recorded, a U grade cannot be changed to another grade. The grade of U is not acceptable as a terminal grade for thesis, problem, and dissertation courses.

A/S This symbol indicates that both A-F and S/U grading systems are permitted in a course. Such courses are identified in their course description and are limited in number. The instructor should explain the conditions for the use of both grading systems at the beginning of the course.

If a student does not receive a grade in a course for which he/she enrolled, one of the following designations must be placed on the student's record:

I This letter indicates that a student was doing satisfactory work, but for nonacademic reasons beyond his/her control, was unable to meet full requirements of the course. When an incomplete is not removed within three terms (including summer), the I automatically becomes an F.

Once a grade of Incomplete (I) converts to an F, it remains an F.

W This designation indicates that the student was permitted to withdraw from a course without penalty. Withdrawals without penalty will not be permitted after the midpoint of the total grading period except in cases of hardship. A determination that a hardship exists must be made by the Office of the Vice President for Student Affairs and

	communicated to the Graduate School.
V	This designation indicates an audit. No credit is given for an audit. Students may not transfer from audit to credit status or vice versa after the closing of the drop/add period of each semester.
ER	This symbol indicates an error in reporting. If not removed after one semester, the ER becomes a grade of WF. Upon receiving a grade of ER, the student should consult with the course instructor.

All grade appeals must be initiated within one calendar year from the end of the term in which the grade was recorded.

For purposes of computing semester, yearly, and cumulative grade point averages, letter grades must be converted into numerical equivalents. The equivalents are:

A	4.0	**WF**	0
B	3.0	**I**	*
C	2.0	**S**	*
D	1.0	**U**	*
A	0	**V**	*

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*Not computed

Enrollment in Graduate Courses—Law/Undergraduate Students

Students enrolled in the School of Law, who hold a bachelor's degree from an accredited university/college and who are in good standing, may enroll in graduate courses with approval of their advisor, the instructor of the course, the graduate coordinator, and the dean of the Graduate School. An approval form may be obtained in the School of Law.

Undergraduate students in good standing who are participating in the Honors Program may register for graduate courses with approval of the instructor and department of the course and the dean of the Graduate School. An approval form may be obtained in the Honors Program Office.

Undergraduate students, having received prior approval, may enroll for up to six semester hours of credit to be included in a graduate program of study if they are within three hours of completing requirements for the undergraduate degree. They may enroll for three hours of such credit if they are within six hours of completing degree requirements. This credit must be in courses numbered 4000-5999 which also have 6000-7999 listings. If work in the 4000-5999 numbered courses is satisfactory, credit at the graduate level will be granted after admission and registration in the Graduate School of the University of Georgia. A form to request prior approval may be obtained in the Graduate School.

Irregular Students

A student registered in the University as an irregular student cannot register for graduate courses. Course work taken in this classification cannot be counted for credit toward any graduate degree.

Special Instructional Programs

Combined Degree Programs

The Graduate School offers certain combined degrees with other schools and colleges in the University.

Selected students in the College of Arts and Sciences may be eligible for completion of combined AB and MA or BS and MS programs in a four-year period. Students in the College may also be allowed to complete AB and MBA or BS and MBA programs in five years. Students interested in these degree objectives should contact the University Honors Program.

Certain students in the College of Family and Consumer Sciences may be eligible to pursue the combined degrees of BSFCS and MBA; in the College of Journalism and Mass Communication students may be allowed to pursue combined programs leading to the ABJ and MBA degrees; and in the Terry College of Business students may be eligible to pursue combined programs leading to the BBA and MAcc degrees. All of these combined degree programs are designed to be completed in five years.

Students interested in the JD and MBA or JD and MAcc four-year combined degree programs should contact the School of Law and the Terry College of Business.

The School of Law and the sport management concentration within the Department of Physical Education and Sport Studies offer a four-year combined degree program that leads to a JD and MED degree respectively.

Students in the forestry and forest environmental resources major may be eligible to pursue the BSFR and MFR degrees in the Warnell School of Forest Resources

Once a student in one of these programs is admitted to the Graduate School, he or she is considered to be a graduate student for enrollment and fee purposes. This may interfere with undergraduate financial aid awards and loans.

Study Abroad/Exchange Programs

The University of Georgia sponsors a variety of study abroad programs. The Office of International Education (OIE) offers advisory services and provides information on study abroad programs lasting an academic year, semester, quarter, summer, or Maymester. The OIE also maintains an extensive library in 203F Barrow Hall for those seeking study, work, internship, volunteering, or travel abroad opportunities.

The following UGA study abroad and exchange programs offer graduate credit: Agriculture and Ecology in Tropical America - Costa Rica/Guatemala; Agriculture and Ecology of Tropical America - Pernambuco, Brazil; Bamberg Exchange Program (Germany); Classics Studies Abroad in Rome; College of Education at Oxford; Costa Rica Study Abroad; Croatia Service Learning Program; Drama and Theatre in London; Elementary Education in Carpi, Italy; India Abroad; International Agribusiness Marketing and Management: Focus on Mexico; Islam, Islamic Culture, and Arabic in Morocco; Kenya Study Abroad Program; Maymester in Tanzania; Studies Abroad Switzerland: Archaeology & History of Helvetia: French-Speaking Switzerland; Study Abroad in New Zealand; Study Abroad in Peru; Study Abroad program in Oaxaca, Mexico; Study Abroad Program - Japan; Study Tour in Child and Family Development (Mexico); Study Tour in Housing and Consumer Economics (Mexico); Summer in Ghana; A Survey of Adult Education Programs in Southern Africa; Three Rivers, Three Cities: An Interdisciplinary Maymester Field Study in Dresden, Prague & Krakow (Germany, Czech Republic, Poland); UGA at Oxford Study Abroad Program; UGA in Ecuador; UGA/Nyenrode MBA Program; UGA Studies Abroad - Cortona, Italy; UGA Study Abroad Program in Avignon (France); Understanding Cultural and Linguistic Diversity in Schools (Mexico); Veracruz International Social Work Program (Mexico); Wildlife Management in South Africa.

More complete information about each of these programs may be found by visiting the website for the OIE: http://www.uga.edu/oie. The website also lists many additional UGA programs that offer undergraduate credit only.

In addition, students may take courses on programs through other universities and transfer the credit back to UGA, provided they have the approval of their major professor, graduate coordinator and dean of the Graduate School. Students wishing to transfer back graduate credit should meet with a study abroad advisor in the OIE to receive the proper forms to obtain approval.

Student Financial Aid, including the HOPE Promise Scholarship and federal student loans may be applied to UGA-sponsored study abroad and exchange programs. Some of that aid may also be applied to programs offered by other universities. In addition, the OIE keeps information on various scholarships that may be applied to study abroad or for obtaining a graduate degree at an international university. Please see our website or visit the Study Abroad Library in 203F Barrow Hall for more information.

To meet with a study abroad advisor, please call the OIE: (706) 542-7903. The office is located in 209 Barrow Hall, e-mail: goabroad@ www.uga.edu, or visit the OIE website: www.uga.edu/oie.

Cortona Program

The University of Georgia sponsors an interdisciplinary study abroad program year- round (fall, spring, summer) located in Cortona (Tuscany), Italy. The areas of study are art history, studio arts (book arts, ceramics, design, drawing, interior design, jewelry and metalsmithing, painting, papermaking, photography, printmaking, sculpture, and watercolor), landscape architecture, Italian, Italian culture, and classics. Extensive travel to major sites (Rome, Pompeii, Siena, Urbino, Florence, Venice, etc.) are part of the itinerary. The program offers courses for undergraduate and graduate credit.

For more information concerning this program, contact Studies Abroad Cortona Program, School of Art, Bishop House, Room #1, (706) 542-7011.

Volcani Program for Graduate Students from the College of Agricultural and Environmental Sciences

A 1987 agreement between the University of Georgia and the Israeli Agricultural Research Organization, Volcani Center, provides for cooperative educational and research activities in the agricultural sciences and related topics. Graduate studies are available to University of Georgia students interested in conducting research in arid and semi-arid zones, leading to an advanced degree; to Israeli graduate students and to candidates from developing countries interested in international training, experience in Israel and a graduate degree from the University.

Academic Regulations and Procedures

Statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and the institution. While every effort is made to provide accurate and current information, the University reserves the right to change, without notice, statements in the bulletin concerning rules, policies, fees, curricula, courses, calendar, or other matters. Students enrolled at the University agree to comply with the University's rules and regulations and to accommodate to any changes necessary.

Students have the responsibility for keeping themselves apprised of current graduation requirements for their particular degree program.

Use of Credit

Course and resident credit used to satisfy the requirements of one degree cannot be used to satisfy the requirements of another degree.

Cumulative Graduate Average

To be eligible for admission to candidacy and graduation, a student must maintain an average of 3.0 (B) both on the graduate transcript and on all courses on the program of study. No grade below C (2.0) will be accepted as part of a program of study for a graduate degree.

When a graduate course is repeated, the last grade received will be used in calculating the cumulative graduate average that is used for probation, dismissal, admission to candidacy, and graduation. Grades received in all graduate courses will be included in the graduate cumulative average.

Extension and Correspondence

Graduate credit is not allowed for work done in extension or by correspondence.

Resident Credit in Graduate Centers

I. For course work leading to a professional master's degree, credit on a resident basis will be granted for graduate courses taken at a graduate center approved by the Board of Regents, provided:

1. the student has been admitted to the Graduate School of the University of Georgia prior to taking the course;
2. the physical facilities such as classrooms, library, and teaching aids are adequate as determined by a site visit of at least three persons, one appointed by the dean of the school or college offering the course, one appointed by the Director of Libraries, and one appointed by the dean of the Graduate School; and
3. the instructor is the same one who teaches

the course on campus, or is approved by the dean of the school or college offering the course and the dean of the Graduate School.

II. Resident credit will be granted for course work or research leading to degrees other than professional master's degrees offered at off-campus locations provided:

1. the student has been admitted to the Graduate School prior to taking the course;
2. the requirement of two consecutive semesters of full-time work on campus in Athens for all doctoral students is satisfied;
3. the requirement of two semesters of full-time work on campus in Athens (which need not be consecutive) is, in general, satisfied for all candidates for MA and MS degrees. An exception to the above may be made for students who prefer to spend one semester of full-time work abroad in a program of study approved by the University of Georgia or the Board of Regents. Such study shall be counted as resident credit; and
4. The instructor is the same one who teaches the course or directs the research on campus, or is approved by the dean of the school or college offering the work and the dean of the Graduate School.

III. Residence or non-residence credit for Studies Abroad is determined by the department from which a student is seeking a degree.

Application for Graduation

An application for graduation must be filed with the Graduate School no later than Friday of the second full week (the first full week for summer) of classes two semesters prior to the anticipated graduation date. Application forms may be obtained from the Graduate School's website: http://www.gradsch.uga.edu.

Final Registration Requirement

Students must be registered at the University of Georgia for a minimum of three hours of credit the semester in which they complete all degree requirements. Once degree requirements have been completed, no further registration is required, even if the official graduation date is in a following semester.

A graduate course, GRSC 9270 (Graduate Study Completion), is designed for students completing degree requirements who will be using staff time or University facilities and for whom no regular course is appropriate. Permission to register for this course must be granted by the Graduate School.

Students will not be approved for graduation if they have a grade of I or ER which, when changed to a recorded grade, could cause the graduate grade point average to fall below the minimum required for graduation.

Graduation Ceremonies

Formal commencement exercises are held in May, August and December. Candidates for degrees are urged to participate in graduation exercises, but they are not required to attend.

Awarding Doctoral Degrees—University Faculty

No member of the faculty of the University of Georgia above the rank of instructor will be awarded a doctoral degree by the University.

Probation and Dismissal

Students may be dismissed by their department at the end of any semester if they have not made sufficient academic progress to warrant continuance of study. Termination of students will follow policies and procedures adopted by the department and reported to the Graduate School. Dismissal by an academic department may be appealed to the dean of the Graduate School after all avenues of appeal have been exhausted at the departmental level. When students are terminated by a department, but not simultaneously by the Graduate School, they may apply for admission to another graduate program if they wish to do so.

Students with a cumulative graduate course average below 3.0 for two consecutive terms are placed on academic probation by the Graduate School. They then must make a 3.0 or higher semester graduate average each succeeding semester that their overall cumulative graduate average is below 3.0. These students are no longer on probation when their cumulative graduate average is 3.0 or above. If they make below a 3.0 semester graduate average while on probation, they are dismissed. When students repeat a graduate course, the last grade will be utilized to calculate the cumulative graduate average that is used for probation, dismissal, admission to candidacy and graduation. Grades of S, U, I, and V will not be used in calculating the cumulative graduate average. However, when a grade of I converts to F, this may result in an action of probation or dismissal for the semester in which the conversion takes place, even if the student is not registered for the semester in which it converted. When students are dismissed under the terms of this policy, they may not apply for admission to another graduate program offered by the University.

Students who are dismissed by the Graduate School for academic reasons may appeal the dismissal to the dean of the Graduate School. The appeal must be submitted to the dean within 30 calendar days following receipt of notice of dismissal. Information concerning the appeal process may be obtained in the Graduate School.

Appeals

University of Georgia students have the right to appeal academic decisions. Usually the appeal goes first to the unit responsible for the decision (for example, grades or departmental requirements to the department; college or school requirements to the school; university requirements to the Educational Affairs Committee). An unfavorable ruling at one level can be appealed to the successive levels (viz. a department ruling can be appealed to the college in which the institutional unit is located; a college-level ruling can be appealed to the University Council Educational Affairs Committee; the Educational Affairs Committee ruling can be appealed to the President of the University; and the President's ruling can be appealed to the Board of Regents). Additional details on appeals of academic matters can be obtained from the Office of Academic Affairs, 110 Old College, telephone (706) 542-8947. Policies regarding appeals in the Graduate School may be obtained from the Office of the Dean, Room 517, Boyd Graduate Studies Research Center, or by phoning (706) 542-4795.

Student Education Records

The federal Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. They include the following:

(1) The right to inspect and review the student's education records, subject to certain specific exceptions. A student wishing to review his/her education records should submit to the registrar, academic dean or other appropriate official a written request that identifies the records he/she wishes to inspect. The University official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official will advise the student of the correct official to whom the request should be addressed.

(2) The right to request the amendment of the student's education records. A student may ask the University to amend a record that he/she believes is inaccurate or misleading. The student should write the University official responsible for the record, clearly identifying the part of the record he/she wants changed and specifying how it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his/her right to a hearing as well as the hearing procedures.

(3) The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without the student's consent. One exception is disclosure to other University officials who have been determined to have a legitimate educational interest in the information.

Upon request, the University also discloses education records without the student's consent to officials of another school in which a student seeks or intends to enroll. In addition, directory information may be disclosed without a student's consent unless the student has advised the registrar in writing and he/she wishes to restrict access to this information. "Directory information" includes, but is not limited to, the student's name, address, telephone listing, e-mail address, date and place of birth, major field of study, participation in officially recognized activities and sports, dates of attendance, degrees and awards received and the most recent previous educational agency or institution attended by the student, as well as the weight and height of members of athletic teams.

(4) The right to file a complaint with the U.S. Department of Education concerning the University's alleged failure to comply with FERPA. The name and address of the office that administers FERPA is Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, S.W., Washington, D.C. 20202-4605.

Copies of the complete University policy statement regarding FERPA may be obtained from the Office of the Registrar.

Academic Honesty

Academic integrity is an adherence to a high standard of values regarding life and work in an academic community. Pursuit of knowledge and the creation of an atmosphere conducive to learning are both definite aspects of academic integrity, but its basis lies in the standard of honesty.

Students at the University of Georgia are responsible for maintaining and adhering to the strictest standards of honesty and integrity in every aspect of their lives. Honesty in academic matters is a large part of this obligation. Specific regulations governing student academic conduct are contained in the Student Handbook, and these should be read to avoid any misunderstanding.

Students and faculty who suspect that an act of academic dishonesty has taken place should contact the Office of the Vice President for Instruction.

Research with Human Participants

As a matter of University policy, all research projects involving human participants must be submitted to the Human Subjects Office for review and approved by the Institutional Review Board (IRB). Human participation is involved any time data are collected on individuals for research purposes. This policy applies to all research whether funded or not, whether conducted by faculty, staff, students or visitors, both on and off campus. Projects involving minimal risk to human participants can usually be approved expeditiously, but it is recommended that the application forms and all the supporting documents be submitted well in advance, allowing at least 4-6 weeks for processing. Failure to obtain IRB approval for research with human subjects is a violation of University policy and federal regulations.

The detailed guidelines and the necessary application forms are available online at www.ovpr.uga.edu/hso/ and questions regarding these may be directed to the Human Subjects Office at (706) 542-3199 or IRB@uga.edu. The Human Subjects Office is located at 606 Boyd Graduate Studies Research Center.

Student Services

Housing

The Family and Graduate Housing Complex at the University of Georgia offers 579 one- and two-bedroom unfurnished apartments to married students, students with children, and single graduate and professional students. Acceptance for enrollment to the University does not ensure an assignment to Family and Graduate Housing, and the demand for Family and Graduate Housing often exceeds the number of available apartments. Interested persons are advised to submit an application and non-refundable application fee as early as possible. Applicants will not be placed on the waiting list until their application and fees are received in the Family and Graduate Housing Office. Applications and information for Family and Graduate Housing may be obtained by writing the Family Housing Office, University of Georgia, 710 East Campus Road, Athens, Georgia 30602-4622 or by calling (706) 542-1473.

Additionally, there are 17 residence halls on campus which provide a variety of living options. While graduate and professional students are welcome in these residence halls, it should be noted that the population of these buildings is overwhelmingly undergraduate and no single occupancy rooms are available for new residents. Although most residence halls operate according to the University's academic calendar, three residence halls, Morris Hall, Payne Hall, and Reed Hall, operate on a 12-month calendar and provide continuous service during academic recesses, while McWhorter Hall is open continuously during the 9-month academic year. All residence halls are air-conditioned and provide dedicated internet access, cable TV and local phone service are provided in each student room.

Applications for on-campus housing will be accepted after students have been admitted to the University. For additional information, write to the Department of University Housing, Russell Hall, University of Georgia, Athens, Georgia 30602-5575, or call (706) 542-1421.

Food Services

University Food Services operates four food service facilities for general student use: Bolton Dining Commons, Oglethorpe Dining Commons, Snelling Hall, and the Tate Student Center. With the exception of the Tate Student Center, which operates under a cash only policy, students may pay for each meal on a cash basis or may purchase meal plans on an academic year contract basis. Meal plan payments are accepted on-line at the food service website. Students who purchase the meal plan enjoy the privilege of unlimited access and unlimited servings as well as the choice of eating in any of the cafeterias. Students are also eligible to participate in special events offered by Food Services. In addition to the major facilities, Food Services provides various cash food outlets throughout the campus. For further information, write the Food Services Business Office, Snelling Hall, The University of Georgia, Athens, Georgia 30602-3772, call (706) 542-1256, or visit the Food Services website at www.uga.edu/food-serv.

Transportation

The Campus Transit System, which is funded each semester by a transportation fee paid by all students, provides bus service on a no-fare basis. The buses run on a regular schedule to all parts of the campus and in adjacent residential areas. Furthermore, the City of Athens and the University of Georgia have an arrangement that permits students to ride any Athens Transit System bus without charge upon presentation of University of Georgia identification card.

Parking Services

All vehicles parking on campus must be registered with Parking Services. Permits last for one year and are issued according to graduate and housing status. Students living in dormitories are issued housing permits. Students living off campus have the choice of graduate or commuter parking. Graduate parking is more expensive, but offers a wider selection of parking as graduate permits are honored in commuter lots. Parking fees are determined each year. Vehicles may be registered on-line at www.parking.uga.edu. Current rules and regulations regarding campus parking can also be viewed from this web address.

University Health Center

Before their arrival on campus, students must complete and return to the University Health Center the University of Georgia immunization and medical history form. Students may not register for classes without documentation for the immunization requirements for new students mandated by the Board of Regents.

The University Health Center offers a comprehensive outpatient health care program to all students who are registered in classes. The Health Center, with its 15 full-time physicians and a complete clinical staff, has regular medical clinics as well as special clinics in acute care, women's health, dentistry, sports medicine, physical therapy, and allergy and travel medicine. Additionally, the Department of Health Promotion offers students preventive health and counseling programs in areas that include: alcohol, tobacco and other substances, campus safety, nutrition, sexual health, and stress management. The department also offers an anonymous HIV counseling and testing program. The Counseling and Psychological Services unit offers individual, couples, and group therapy, a comprehensive eating disorders program, a relaxation therapy training room, and consultation, evaluation, and testing services. Supplemental health insurance is available to help cover costs of medical emergencies away from campus or beyond the scope of care available at the Health Center. For more information, write the University Health Center, The University of Georgia, Athens, Georgia 30602-1755, or call (706) 542-1162 or access our website at www.uhs.uga.edu.

Career Center

The University of Georgia Career Center is a comprehensive career planning and employment center located on the second floor of Clark Howell Hall. Our office operates under a college specific model of career services delivery. Within this model, each Career Consultant is responsible for a college and serves as the tangible link between the Career Center and their assigned academic area.

The Career Center provides a complete range of services and materials in the areas of career development (career counseling, skills training, resume and interview workshops, and assistance in the self-directed job search), graduate & professional school preparation (Graduate School Information Day, programming, and library resources), experiential education (student employment, internship information, and related reference material), and employer relations (Campus Interviews, Fall & Spring Career Fairs, Campus Employment Fair, Teacher Recruitment Day, Summer Employment Day, listings of full time jobs, and a myriad of reference materials in the Career Library).

Students may contact our Student Employment service for help in finding part-time work on campus or in the Athens area, as well as summer or vacation employment.

The Career Center is open Monday-Friday, 8am-5pm. For more information, call (706) 542-3375 or visit our website at www.uga.edu/career.

Disability Services

The mission of Disability Services (DS) is to create an accessible academic, social, and physical environment for students with disabilities at the University of Georgia. DS seeks to eliminate altitudinal barriers that exist on campus and serves as an advocate for students with disabilities. DS also encourages students to develop independence and responsibility as they participate in university life.

DS provides services to students who have either a physical or mental impairment which substantially limits one or more major life activities, i.e. ADD/ADHD, hearing and visual impairments, psychological disorders, disorders of the central nervous system, acquired brain injuries, mobility impairments, and chronic health conditions. To qualify for services, students must provide current documentation of the disability from a qualified health professional.

DS provides a variety of academic and support services to ensure equal access to University programs and activities. DS also provides assistive devices and state-of-the-art adaptive technology specifically designed for people with disabilities.

Centrally located on the first floor of Clark Howell Hall, DS is open M-F from 8 a.m. to 5 p.m. For more information, call (706) 542-8719 or visit our website at: iris.dissvcs.uga.edu/.

Campus Security

Each year the University of Georgia publishes a campus security report. This report contains information on campus safety programs as well as advice on crime prevention and the procedures to follow in reporting crimes. The report also contains statistics about crimes on campus during the last three calendar years. This report is available upon request from the Office of Graduate Admissions, The University of Georgia, Athens, Georgia 30602-7402, (706) 542-1787.

Financial Information

Expenses

The University of Georgia converted from the quarter system to the semester system Fall 1998. In-state tuition for the semester system will be determined in April of each year, after the printing of this bulletin. For semester fee information, visit the Graduate School website at www.gradsch.uga.edu or call the Bursar's Office, (706) 542-1625. The website will be updated with semester information as it becomes available.

The current estimate cost of education for a Georgia resident is $13,274 per academic year. This estimate includes tuition and fees, books and supplies, room and board, insurance, and personal expenses. An additional out-of-state fee assessed of all non-Georgia residents increases this estimate to $22,292. These estimates do not include travel.

Students who hold a graduate assistantship pay tuition of $25 per semester, payable at the beginning of each semester. This figure is based on the minimum registration for a graduate assistant of twelve hours each semester. Out-of-state tuition is waived for these graduate assistants. Students holding graduate assistantships must also pay the activity, athletic, transportation, technology and health fees.

Agencies sponsoring regularly enrolled students who receive special academic programming or administrative services are expected to pay fees in addition to those normally charged for the usual administrative services. While rates charged will be determined by contract arrangements, the scheduled fees for such services will be $125 per semester, payable in U.S. dollars only.

All tuition charges, board, room rent, or other charges are subject to change at the end of any academic term.

Fee Refunds

Students who formally withdraw from the University within the time period described below will be entitled to a refund. Withdrawal from the University cannot be accomplished through drop/add after the first day of class.

The refund percentage shall be computed on a pro rata basis determined by dividing the number of calendar days remaining in the semester (from the student's official withdrawal date through the last day of scheduled exams) by the total calendar days in the semester. The total calendar days in a semester includes weekends and exam periods but excludes scheduled breaks of five or more calendar days. Students who withdraw from the University when the calculated percentage of remaining days is 40% or less are not entitled to a refund of any portion of institutional charges.

The following are not entitled to any refund of fees paid: students suspended for disciplinary reasons, students who leave the University when disciplinary action is pending, or students who do not formally withdraw.

No refunds for reduction in hours after the drop/add period are allowed unless such reduction is the fault of the University.

Refunds for elective charges due to complete withdrawals during the term will be made on a prorated basis depending on the date of complete withdrawal. Students who withdraw from the University when the calculated percentage of remaining days in the term is 40% or less are not entitled to a refund of any portion of institutional charges.

Financial Aid and the Refund Policy: In the event a student receives federal, state, private or University financial aid, completes registration, and subsequently reduces his/her enrollment status or withdraws, the amount of funds to be returned to federal, state, private or University programs will be in accordance with regulations concerning refunds and repayments to the appropriate programs. A calculation will be made on all financial aid recipients to determine whether a student who completely withdraws during a term has "earned" the monies disbursed. A student "earns" his/her aid based on the period of time they remain enrolled. During the first 60% of the term, a student earns financial aid funds in direct proportion to the length of time the student remains enrolled. Beyond the 60% point all aid is considered earned. The responsibility to repay "unearned" aid is shared by the University and the student in proportion to the aid each is assumed to possess.

For more details concerning refunds for students with financial aid, please contact the Student Accounts Department in 105 Business Services. All refunds, up to the amount of the aid received for the term, will be returned to financial aid sources, according to the following priority:

1. Federal Family Educational Loans
2. Federal Direct Student Loans
3. Federal Perkins Loans
4. Federal Pell Grants
5. Federal Supplemental Educational Opportunity Grants
6. Student Incentive Grants
7. Other federal sources of aid
8. Other state, private, or institutional aid
9. Student

Academic Common Market

The University of Georgia participates in the Academic Common Market, an agreement among states in the southern region for sharing unique academic programs. Residents of the participating states who qualify for full (unconditional) admission to the specified graduate degree program and who are approved by their state coordinator may enroll at the University of Georgia on an in-state tuition basis.

To qualify for waiver of the non-resident fee, a student must establish eligibility for participation in the Academic Common Market by the midpoint of each semester. Eligibility is not retroactive to previous academic terms.

For further information about the Academic Common Market, persons should contact the Graduate School (706) 542-4795, or the Southern Regional Education Board, 1340 Spring Street, N.W., Atlanta, Georgia 30309.

Classification of Students for Tuition Purposes

With respect to resident/nonresident student classification, University System policies provide:

1. (a) If a person is 18 years or age or older, he or she may register as an in-state student only upon a showing that he or she had been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.

    (1) a student whose parent, spouse, or court-appointed guardian is a legal resident of the State of Georgia may register as a resident providing the parent, spouse, or guardian can provide proof of legal residency in the State of Georgia for at least 12 consecutive months immediately preceding the date of registration;

    (2) a student who previously held residency status in the State of Georgia but moved from the state then returned to the state in twelve (12) or fewer months;

    (3) students who are transferred to Georgia by an employer are not subject to the durational residency requirement.

   (b) No emancipated minor or other person 18 years of age or older shall be deemed to have gained or acquired in-state status for tuition purposes while attending any educational institution in this State, in the absence of a clear demonstration that he or she has in fact established legal residence in this State.
2. If a parent or legal guardian of a student changes his or her legal residence to another state following a period of legal residence in Georgia, the student may retain his or her classification as an in-state student as long as he or she remains continuously enrolled in the University System of Georgia, regardless of the status of his or her parent or legal guardian.
3. In the event that a legal resident of Georgia is appointed by a court as guardian of a nonresident minor, such minor will be permitted to register as an in-state student providing the guardian can provide proof that he or she has been a resident of Georgia for a period of 12 months immediately preceding the date of the court appointment.
4. Aliens shall be classified as nonresident students; provided, however, that an alien who is living in this country under an immigration document permitting indefinite or permanent residence shall have the same privilege of qualifying for in-state tuition as a citizen of the United States.
5. Waivers: Based upon the student's academic performance (GRE and grade point average), an institution may waive out-of-state tuition for:

   (a) students selected to participated in a program offered through the Academic Common Market;

   (b) international students and superior out-of-state students selected by the institutional president or an authorized representative, provided that the number of such waivers in effect does not exceed two (2) percent of the equivalent full-time students enrolled at the institution in the fall term immediately preceding the term for which the out-of-state tuition is to be waived;

   (c) full-time employees of the University System, their spouses, and their dependent children;

   (d) medical and dental residents and medical and dental interns at the Medical College of Georgia;

(e) full-time employees in the public schools of Georgia or in the programs of the State Board of Technical and Adult Education and their dependent children. Teachers employed full-time on military bases in Georgia shall also qualify for this waiver;

(f) career consular officers and their dependents who are citizens of the foreign nation which their consular office represents, and who are stationed and living in Georgia under orders of their respective governments. This waiver shall apply only to those consular officers whose nations operate on the principle of educational reciprocity with the United States;

(g) military personnel and their dependents stationed in Georgia and on active duty unless such military personnel are assigned as students to System institutions for educational purposes;

(h) the University of Georgia, the Georgia Institute of Technology, Georgia State University, and the Medical College of Georgia shall be authorized to waive the out-of-state tuition differential for a limited number of graduate students each year;

(i) students who are legal residents of out-of-state counties bordering on Georgia counties in which an institution of the University System is located and who are enrolled in said institution;

(j) full-time members of the Georgia National Guard, their spouses, and their dependent children;

(k) students who are certified by the Commissioner of the Georgia Department of Industry, Trade and Tourism as being part of a competitive economic development project;

(l) students who are employees of Georgia-based corporations or organizations that have contracted with the Board of Regents through University System institutions to provide out-of-state tuition differential waivers;

(m) students enrolled in special pilot programs approved by the Chancellor. The Chancellor shall evaluate institutional requests for such programs in light of good public policy and the best interests of students. If a pilot program is successful, the tuition program shall be presented to the Board for consideration;

(n) any student participating in an ICAPP® Advantage program;

(o) any international student who enrolls in a University System institution as a participant in a direct exchange program that provides reciprocal benefits to University System students;

(p) a dependent student who, as of the first day of term of enrollment, can provide documentation supporting that his or her supporting part or court-appointed guardian has accepted full-time, self-sustaining employment and established domicile in the State of Georgia for reasons other than gaining the benefit of favorable tuition rates may qualify immediately for an out-of-state tuition differential waiver which will expire 12 months from the date the waiver was granted. An affected student may petition for residency status according to established procedures at the institution;

(q) members of a uniformed military service of the United States who, within 12 months of separation from such service, enroll in a program for teacher certification and demonstrate an intent to become a permanent resident of Georgia. This waiver may be granted for not more than one year.

6. Students are responsible for registering under the proper residency classification. Those who believe they are entitled to be classified as a legal resident may petition for a change in status. The petition must be filed no later than sixty (60) days after the term begins in order for that term. Reclassifications will not be reconsidered for prior terms. Currently enrolled students may petition for reclassification by completing the petition form available from the *Residency* link on the Registrar's website at www.reg.uga.edu. New or readmitted students will be classified by the respective admissions office as residents or nonresidents based upon information the stu-

dents provide as part of their standard admissions application.

7. Questions concerning classification for fee-payment purposes or waivers of out-of-state fees should be directed to one of the following persons:

   Graduate applicants for admission:
   Director of Graduate Admissions
   534 Boyd Graduate Studies Research Center

   Currently enrolled students:
   Assistant Registrar
   114 Holmes/Hunter Academic Building
   (706) 542-8796

Financial Assistance and Awards

Students in need of financial assistance during their graduate study at the University of Georgia have three possible avenues for funding. The majority of financial aid is provided in the form of graduate assistantships which carry a stipend. Such assistantships are awarded annually on a competitive basis to qualified graduate students and they require part-time teaching, research, or other academic duties defined by their department. Assistantships are normally awarded on a one-third basis or higher. One-third time indicates that the student must work 13 hours per week in the awarding unit, normally their department. Assistantships also require the individual to be enrolled as a full-time student with a course load of at least twelve credit hours. Assistantships are awarded either as a Graduate School Assistantship or a Departmental Assistantship. A discussion of the differences in the two are provided below.

The second avenue for potential funding includes scholarships and fellowships. Such awards are grant-in-aid to a student and are available to students majoring in a specific area of study. These awards may be based on academic achievement, teaching, or financial need. Scholarships and fellowships originate as sources both internal to the University and external from private and government sponsorships. The third avenue of potential funding is that of awards which emphasize specific areas of study, recognize outstanding research, and acknowledge quality students already in a program.

Deadlines

Applicants wishing to be considered for financial assistance should ensure that their application materials for admission to the Graduate School and their department are completed early, generally by the end of December. The earlier the completion of the application process the more likely the student will be considered for a financial award by their department. The Graduate School Assistantship competition begins at the end of February and only students who are fully admitted to the department and the Graduate School can be considered. Departmental assistantships are awarded beginning in March. Students who have not completed the application process will not be considered for financial support.

University Assistantships

Presidential Graduate Fellows Program

This prestigious, highly competitive award began in 2000 with the intent of recruiting exceptionally qualified students to our doctoral programs. The nominations for this award are presented to the Graduate School by individual departments in early February. This award is guaranteed for five years of support for students entering with a bachelor's degree and three years of support for student's entering with a masters degree contingent on satisfactory performance and progress toward degree completion. A maximum of twelve awards are made annually.

The annual stipend for the Presidential Graduate Fellow is $20,000 per year with a reduced tuition of just $25 per semester and an activity fee of $413 per semester. The student must be fully engaged in graduate studies and may not hold any other employment. Only citizens and legal permanent residents of the United States are eligible to receive this award.

In addition to being engaged in research and graduate studies on a full-time basis (12 months), each recipient is expected to participate in special activities which are designed to enhance their professional development. Such activities include (1) the participation in a monthly discussion group with other Fellows and selected faculty members to discuss issues that add value to the University and the student's education and (2) to provide mentorship to selected undergraduates involved in research activities under the Center of Undergraduate Research Opportunities (CURO) program.

Graduate School Assistantships

Graduate School Assistantships are awarded each year on a competitive basis following a highly qualified student's nomination by their major department or school. Each nominee is evaluated by a faculty panel. Selections are based on the applicant's academic record, test scores, recommendations, and other pertinent information. The Graduate School Assistantship is awarded for the first two years of a student's academic study (including the first summer). Recipients of these assistantships must be fully admitted to the Graduate School in a degree seeking status. Students must continue to be a full-time student taking at least twelve hours of credit per semester.

Assistantship stipends for Graduate School awards are $1,333 per month for a master's student and $1,500 per month for a doctoral student. These awards are made for the first 21 months of graduate studies. These awards are referred to as 40% assistantships and require a 16-hour per week work commitment. The duties of the assistantship are determined by the individual department and the department's graduate coordinator can supply more specific information. The total annual benefit to the student is equivalent to their annual stipend plus a tuition waiver of $1,946 (resident) or $6,680 (non-resident) per semester. The student pays a reduced tuition of just $25 per semester and an activity fee of $413 per semester. Considering the stipend, savings and the required payments, the effective total annual benefit of the award for a master's student is $20,659 (resident) or $34,861 (non-resident) per year, whereas, the doctoral student benefit will be $22,659 (resident) and $36,861 (non-resident) per year. Recipients of these Graduate School Assistantships are eligible to receive supplemental stipends from their departments. The combination of the Graduate School Assistantship and departmental supplement cannot exceed 20 hours of work per week.

Dissertation Completion Assistantships

Doctoral Research Assistantships are awarded each year on a competitive basis following a highly qualified student's nomination by their major department or school. Each nominee is evaluated by a faculty panel. The Doctoral Research Assistantships are available to doctoral students in their final year of study. These assistantships allow the student to devote time to the completion of their dissertation. At the completion of the assistantship award, the student is expected to have finished the dissertation and graduated.

The assistantship stipend for 2002-2003 is for $15,000 to be paid over a ten month period. Students holding this assistantship pay tuition of $25 per semester and an activity fee of $393 per semester. The total award, including a waiver of tuition, is equivalent to that discussed above in the Graduate School Assistantship section. Contact your departmental graduate coordinator for more information about the Doctoral Research Assistantship. The combination of the Graduate School Assistantship and departmental supplement cannot exceed 20 hours of work per week.

Departmental Assistantships

Departments offer assistantships that are competitively awarded to applicants within an individual department. The awards may be either Teaching Assistantships or Research Assistantships. Criteria and procedures for making the awards are determined at the departmental level. Contact the department's graduate coordinator for more details.

The individual department determines the level of the assistantship and, therefore, the amount of work (hours) required of the student per week and the stipend offered. Normal one-third time assistantships require 13 hours of commitment per week. The stipends may vary between $8,600 and $14,400 for the academic calendar (nine months). Students holding departmental assistantships receive a tuition waiver, students pay a reduced tuition of only $25 and an activity fee (currently $393) each semester.

International applicants for teaching assistantships, who are required to submit the TOEFL score for admission to the Graduate School, can only be assigned instructional activity in the classroom or in the course-related laboratory or breakout sessions after passing the SPEAK test or if a native English speaker is on-site as a co-instructor. This policy applies regardless of the student's appointment classification (e.g., GA, GRA, GTA, GLA).

Faculty Development in Georgia Assistantships

The Faculty Development in Georgia program assists in the professional development of faculty members in Georgiaís colleges and universities. Assistantships and tuition waiver are awarded on a competitive basis for full-time doctoral study at the University of Georgia. To participate, an applicant must be nominated by their college president, receive a yearís leave of absence from the home institution, and be accepted to a doctoral program of study at the University of Georgia. Faculty members of public and private institutions are eligible for the award. Each semester recipients participate in a seminar focusing on teaching and learning offered by the Institute of Higher Education. For a brochure or additional information, contact the Institute of Higher Education, (706) 542-3464, or go to the website: www.uga.edu/ihe/PublicSerFDIG.html.

Georgia Review Editorial Assistantship

Awarded annually to an outstanding graduate in the Department of English, this nine-month assistantship pays a monthly stipend and includes a waiver of tuition. The assistant works with the staff of the Georgia Review and assists in various editorial duties. One third-time service is required, with a maximum course load each semester of nine hours. The competition for this award occurs each winter, and the winner is selected by the editor and staff of the Review.

Tull Teaching Assistantships

Recipients are responsible for teaching accounting principles courses each semester. Guidance is provided by the School of Accounting faculty. The stipend is $4,500. Recipients must be enrolled for a minimum of nine hours.

Regents' Waivers of Out-of-State Tuition

The Graduate School awards out-of-state tuition waivers to students who are classified as nonresidents of the State of Georgia. The awards are based upon applicants' academic records and the recommendations of their major departments. The waiver renews on a semester basis contingent upon recipients earning at least a 3.50 graduate grade point average on twelve hours of graduate course work. These awards waive only the non-resident portion of a student's tuition. Students interested in being nominated for this award should contact the graduate coordinator in their major department.

Regents' Opportunity Scholarships

The Regents' Opportunity Scholarships were established by the Georgia General Assembly in 1978 to aid economically disadvantaged students who have been accepted for admission as incoming professional or graduate students enrolled in institutions of the University System. Students must be residents of the State of Georgia. The scholarships are needs based only and awarded in the amount of $5,000 per year and are renewable. Students holding an assistantship are not eligible. Students must maintain good academic standing and full-time status. Priority is given to renewals. The application process begins in February and are made by April 1. For more information contact the dean of the appropriate academic college/school.

Doctoral Student Travel Grants

Travel grants are for doctoral students who are at an advanced stage in their graduate program and are presenting results of their dissertation findings. Students wishing support for international travel should contact their graduate coordinator in order to submit their request to the Office of the Vice President of Research. Students receiving an invitation to present a paper at a professional meeting within North America may submit a travel request to the Graduate School. Contact the department's graduate coordinator concerning the guidelines applicable to these travel grants.

Excellence in Teaching Award for Teaching Assistants

Students are nominated by their departments and recipients are selected by a faculty committee. Five awards are given annually in the amount of $1,000.

Excellence in Research by Graduate Students

Students are nominated by their departments and recipients are selected by a faculty committee. Five awards are given annually in the amount of $1,000.

Contacts

All fellowships, scholarships, departmental assistantships, and other awards are specific to an individual department or major. Please contact the graduate coordinator for that department for more information about the award.

Fellowships

The Alvin B. Biscoe Fellowship

This fellowship was established in 1967 by Mrs. Helen Biscoe in memory of her husband Dr. Biscoe who served as dean of the Terry College of Business from 1945 to 1949 and later as dean of Faculties of the University. This fellowship is awarded annually to two outstanding entering doctoral students in the Terry College of Business. Awards are based on scholastic achievements and professional potential. The award amount is approximately $5,000.

Coral Jo Bishop Fellowship

(The Little Red School House for Special Children, Inc.)

The Coral Jo Bishop Fellowship is annual fellowship awarded to one or more students who are candidates for the Master of Education degree in the Department of Special Education, College of Education. The award of up to $1,000 is made annually.

Jerome L. Clutter Memorial Fellowship

This fellowship was established in 1983 by the Clutter Family and the University of Georgia in memory of the late Dr. Jerome L. Clutter. The purpose of this fellowship is to encourage superior students to pursue a graduate program in forest biometrics or timber management. The stipend is $5,000 for the academic year. Application information is available from the Office of the Associate Dean, School of Forest Resources. Applications must be received prior to March 1.

The Edward T. Comer Fellowships

The Comer Fellowships of $2,000 are awarded on a competitive basis to new and current PhD students in business administration. Students are nominated by their departments for these nonservice fellowships, and selection is based on merit.

Genetics Predoctoral Training Grant, National Institutes of Health

These fellowships for graduate study in the area of genetics carry a stipend of at least $16,640 for a twelve-month period and, in addition, include provisions for reimbursement of tuition and fees, certain travel expenses, and limited funds for research support. Application should be made to the Graduate Coordinator, Department of Genetics.

Georgia Feed and Grain Association Graduate Fellowship in Animal Nutrition

This fellowship of $2,000 is awarded annually to a U.S. citizen who is a graduate student in animal nutrition or in animal and dairy science, poultry science, or crop and soil sciences. Funds for the award are provided by the Georgia Feed and Grain Association. This nonrenewable fellowship is in addition to and independent of any other financial support.

Martin J. Hillenbrand Graduate Fellowship

The Martin J. Hillenbrand Graduate Fellowship in the Department of Political Science at the University of Georgia is given to a student who does research within the scope of international relations, global studies, or comparative politics on the subject of transatlantic relations (United States Germany or United States - European Union). This award, for an incoming student, carries a $10,000 stipend and a tuition and fee waiver.

Almonte Howell Fellowship Award
This award was established in memory of Almonte C. Howell, Jr., research professor of music, by his wife, Kathryn, and friends. Its purpose is to provide research support for outstanding and deserving graduate students in musicology. Nominations are initiated by the School of Music and the Almonte Howell Fellowship Committee.

Perryco Fellowships
Perryco Fellowships are available for doctoral students in insurance. These awards are made by the Department of Insurance, Legal Studies, Real Estate and Management Sciences and are available for incoming PhD students. This fellowship is awarded annually for approximately $1,500.

Phelps-Stokes Graduate Fellowship
The holder of this fellowship must pursue studies in one of the following departments: economics, education, history, political science, social work, or sociology. The recipient must make a scientific study of the role of blacks in American civilization. The value of this scholarship is $5,000 a year. Application should be made to the student's major department in the university.

Scholarships

School of Art Scholarships
Dorothy H. McRae Ceramic Arts Scholarship. The purpose is to provide scholarships to outstanding graduate students in the ceramic area based on excellence of work and academic record.

John D. and Marilyn M. Kehoe. This scholarship is awarded to assist talented and deserving students to study in Cortona, Italy.

The Dolores E. Artau Scholarship in Romance Languages
Two awards of approximately $1,000 are given annually to doctoral students enrolled in the Department of Romance Languages.

W. Tapley Bennet, Jr. Scholarship
This scholarship is available to outstanding students who wish to pursue graduate study in the Department of Political Science. The amount and frequency of the award depend upon the selection committee's judgment of the qualifications of candidates and upon income produced annually by the bequest. The amount awarded most recently was $2,500. For more information, contact the Political Science Department.

Kathryn S. Bigham Scholarship
The purpose is to provide scholarship awards to graduate students and prospective graduate students with financial need in the School of Social Work. Special consideration will be given to international students. Applications should be made to the dean of the School of Social Work. The $1,000 scholarship is awarded annually.

Glenn and Helen Burton Feeding the Hungry Scholarship
The College of Family and Consumer Sciences offers this scholarship to doctoral students holding assistantships whose research involves human nutrition, or crop breeding for food or feed. The scholarship has a value of $3,000 and is renewable.

James L. Carmon Scholarship
This scholarship honors the late Dr. James L. Carmon, who was assistant to the president of the university for computing activities and assistant vice chancellor for computing systems in the University System of Georgia. The Carmon Scholarship is awarded in the fall semester to a graduate student in the sciences and creative arts whose thesis/dissertation research involves an innovative use of computers. The scholarship will provide a $2,000 stipend for one academic year. Recipients of the award are eligible to apply in subsequent years. Only full-time graduate students in good standing at either the master's or doctoral level are eligible. The recipient must have completed three semesters of graduate school and have selected a thesis research project. Further information may be obtained by contacting the Office of the Vice President for Research, (706) 542-6512.

Department of Classics Summer Tuition Reductions and Scholarships for Latin Teachers
Limited scholarship assistance is available to Latin teachers enrolled in the department's Georgia Classics Summer Institute; in addition, teachers from out-of-state are awarded waivers reducing tuition for the Institute to the in-state level. Inquiries should be sent, no later than February 1, directly to the Department of Classics.

Thomas F. Comer Scholarship
This scholarship is available to a master's degree student who will be offered an assistantship. Applicants must have been accepted by the College of Family and Consumer Sciences, have a minimum GPA of 3.0 and have a minimum GRE score of 1000. A written statement about the applicant's professional goals and the need for financial assistance to achieve them must accompany the application. Value $1,000.

Karen R. Davis Graduate Scholarship
The Karen S. Davis Scholarship recognizes a graduate student in the College of Family and Consumer Sciences whose focus is children and families. Preference will be given to but not limited to students who plan a career in Development Therapy-Developmental Teaching. Recipients may be MS or PhD students who have completed at least one year of graduate studies. Value $1,000.

Diane C. Davison Scholarship
The Diane C. Davison Scholarship was provided on the occasion of her husband's resignation as the President of the University of Georgia to the University Women's Club. The scholarship is awarded by the Graduate School on behalf of the University Women's Club in the amount of approximately $1,500.

June and Bill Flatt Nutrition Excellence Scholarship
This scholarship is presented to a graduate student in Foods and Nutrition who has excelled academically, possesses strong research interests, and shows promise of leadership in the field. Recipients will have demonstrated service and involvement in extracurricular activities. Value $1250.

Food Science and Technology Special Scholarships
In addition to normal graduate research and teaching assistantships, two graduate scholarships are available from the Department of Food Science and Technology. The Association of American Candy Technologists scholarship offers $1,000-$2,000 to students interested in a career in candy technology. The John J. Powers scholarships ($1,000-$2,000) are for food science graduate students displaying leadership character. Exceptional graduate students also may apply through the department head for fellowships ($1,000-$10,000) from the Institute of Food Technologists. Applications for all of these are due February 1.

Hazel and Gene Franklin Scholarship
Applicants must be registered in the College of Family and Consumer Sciences and have at least two semesters remaining in their degree programs. Evidence of academic excellence and professional commitment must be presented by the applicant. Each of three scholarships has a value of $1,000.

Gamma Iota Sigma Scholarships
Various members of the Georgia Insurance industry have contributed to the Gamma Iota Sigma Scholarship. Up to five $600 scholarships are awarded each year. The risk management and insurance faculty, at its discretion, may supplement this scholarship for an additional $400. The maximum award is $1,000.

Phil Gray Memorial Scholarship in Technology Education
This scholarship fund was established as a memorial to Phillip Gray by his family and faculty in technology education. The scholarship is presented annually to eligible University of Georgia student(s) exhibiting commitment and character that could lead to a successful career as a technology educator. The candidates must be nominated from the Department of Occupational Studies and must be admitted in a graduate pro-

gram focusing on technology education. Value $1,000.

James D. Horne Scholarship
The purpose is to provide a scholarship to an undergraduate or graduate student in the School of Social Work, selected by the dean and a funding committee, with preference given, but not limited to a student whose major emphasis or practicum is the homeless. The $1,000 scholarship is provided annually.

Virginia Wilbanks Kilgore Scholarship
This scholarship is available to either undergraduate or graduate students in the College of Family and Consumer Sciences. Applicants must have at least 1100 on the GRE or have a 3.5 grade point average. Value of $2,500 first year, renewable at $1,500 second year. Six awards are available.

Rosabelle Carr Koelsche Scholarship
This scholarship is available to both undergraduate and graduate students enrolled in the College of Family and Consumer Sciences. Undergraduate applicants should have at least 60 hours of course work remaining in which to complete their program; graduate applicants should have a minimum of 18 hours remaining. These scholarships have a value of $1,000.

Pauline Lide Scholarship
This fund, established in honor of a retired associate dean, is used to provide financial aid to needy and superior graduate students in the School of Social Work. Applications should be made to the dean of the School of Social Work. The $1,000 scholarship is provided annually.

Martha Love May Memorial Scholarship
This scholarship was established in 1986 by Professor Emeritus Jack T. May in memory of his wife. The stipend of $1,500 is awarded annually to a female student in the School of Forest Resources. The student may be undergraduate or graduate and must have displayed outstanding scholarship in her chosen area of study. Applications must be received by March 1 in the Office of the Associate Dean of the School of Forest Resources.

Carroll Wade McGuffey Scholarship
The purpose of the fund is to provide a scholarship to be awarded to a doctoral student(s) in educational leadership, whose studies will include research into the impact of the school's physical environment on teacher behavior, pupil behavior and/or pupil learning. Further information concerning procedures for application can be obtained from the Department of Educational Leadership. The award is provided annually for approximately $1,000.

The Mekis Scholarship
The Mekis Scholarship is available to outstanding students who wish to pursue graduate study in political philosophy at The University of Georgia. The amount and frequency of the award depend upon the selection committee's judgment of the qualifications of candidates and upon the income produced annually by the Mekis bequest. The amount awarded most recently was $2,500. It is expected that the Mekis Scholarship will be offered in conjunction with other fellowships or assistantships for which the recipient is competitive. For more information contact the Department of Political Science.

David J. Mullen Scholarship
This scholarship fund was established by the family, friends, and students of Dr. David J. Mullen, Sr. The purpose of the fund is to provide scholarship assistance to a doctoral candidate preparing for a public school position in the Department of Educational Leadership. This $1,000 scholarship is non-renewable and is to be awarded during the year of writing the doctoral dissertation. Further information concerning eligibility and procedures for application can be obtained from the Department of Educational Leadership.

Gwendolyn Brooks O'Connell Scholarship
This scholarship is presented annually to a graduate student with outstanding performance who shows promise in the instructional area. The candidates must be nominated from their department and must have been enrolled in the College of Family and Consumer Sciences for at least one semester. Value $1,000.

Archie E. Patterson Scholarship
This scholarship fund was established in 1987 by T&S Hardwoods, Inc., of Milledgeville, in honor of Professor Emeritus Archie E. Patterson. The award recognizes superior scholarship and is available to juniors, seniors, and graduate students enrolled in the School of Forest Resources. The stipend is for the amount of one year's in-state tuition. Applications must be received by March 1 in the Office of the Associate Dean of the School of Forest Resources.

Emily Quinn Pou and Joe (J.W.) Pou Scholarship
The scholarship is open to undergraduate or graduate students currently enrolled in the College of Family and Consumer Sciences having at least two semesters remaining in their degree program. A minimum GPA of 3.0 is required for consideration. A written statement about the applicant's professional goals and how the scholarship may assist in the achievement of these goals must accompany the application. The value of the scholarship is $1,500.

Charles M. Rose Scholarship
Watt Publishing Company sponsors a scholarship in the name of Mr. Charles M. Rose. This scholarship is made annually to a graduate or undergraduate student in poultry science. Selection is based on scholarship, professional and extracurricular activities, and departmental and university service. The stipend is $1,000 each year.

Elizabeth T. Sheerer Graduate Scholarship
Available to a deserving graduate student in the Department of Child and Family Development who has excelled academically, has strong research interests and competencies, and shows promise for leadership in the field of Family and Consumer Sciences. Value $1,000.

The Miriam Watts-Wheeler Scholarship
The Miriam Watts-Wheeler Scholarship Fund was established in 1996 by the late Mr. Harold Elton Wheeler in honor of his wife, the late Miriam Watts Wheeler. The Wheelers were Doner Friends of the University. Mrs. Wheeler's life long interest in rocks and minerals gave them many years of pleasure as they traveled throughout the United States and abroad gathering specimens for her collection. Mrs. Wheeler was very impressed by University of Georgia and Mr. Wheeler established this fund in her memory. The purpose of the fund is to support graduate students in the Department of Geology, including but not limited to, scholarships, summer stipend support, travel, equipment, and related research expenses. In the past few years, individual awards have been as much as $1,500. Application should be made to the Department of Geology, through the department head and Geology Admission and Awards Committee.

Heather Christina Wright Memorial Scholarship
This School of Social Work scholarship fund was established by family and friends in memory of Heather Christina Wright. The purpose of these awards is to recognize students who exemplify the character and enthusiastic spirit of Heather and the desire to dedicate their lives to serving and helping cancer patients and their families. This $1,000 scholarship is awarded annually.

Awards

The Gilles and Bernadette Allard Geology Award Fund
This fund was established at the University of Georgia Foundation to provide awards to support geology graduate students for field related research expenses. The fund was initiated by Dr. Jeff Reid (PhD, UGA, 1981) upon the retirement of Professor Allard. The award is given each spring to a geology graduate student by the department head, based on the recommendation of the Geology Admissions and Awards Committee. Students must apply for the award by submitting a one-page project description along with a faculty letter of support. The award value is up-to $1,000.

Department of Chemistry - Outstanding Teaching Assistant Awards
These awards are supported by a gift from Dr. Kenneth W. Whitten. $1,000 is awarded to out-

standing teaching assistants in the Department of Chemistry each year.

Department of History Awards
The Thomas Pleasant Vincent, Sr., Award. Up to $1,500 for "distinguished students of history at the undergraduate or graduate level" with "an expressed interest in Georgia history." This award may be given to students in fields other U.S. history, but it does require an "expressed interest" in Georgia history.

The Warner-Fite Award. Up to $1,200, limited to students in American history.

In some years, the Vincent, Sr., award and the Warner-Fite award may be divided among two recipients.

Nominations from the faculty for these awards are solicited in early May, the deadline for nominations are in late May, and awards are presented in early June. For further information, please contact the graduate coordinator in history at (706) 542-2053.

John Sanford Levy Memorial Award in Marine Geology
A fund was established in 1980 in memory of John Sanford Levy, an outstanding graduate student in marine geology, by his wife, Elizabeth, and by his parents, Dr. and Mrs. Alvin Thomas Levy. The income from this fund is used to support graduate students in the Department of Geology in the specific area of marine sciences. In recent years, individual awards have been as much as $1,000. Application should be made to the Department of Geology, through the Marine Geology Committee.

Joe and Diane Perno Memorial Fund
This fund was established by the Perno family in memory of Joe and Diane Perno. The purpose of these awards is to recognize superior students in the School of Social Work. Awards include tuition supplements and research awards. Application should be made to the School of Social Work. This $1,000 award is provided annually.

Martin Reynolds Smith Award
By the gift of $2,000, Mr. J. Warren Smith established this fund in memory of his son, Martin Reynolds Smith. The interest from this investment is to be used as prizes for excellence in research in chemistry. Applications should be directed to the head of the Department of Chemistry.

Mary Ella Lunday Soule Award
A memorial fund was established in 1979 to honor Mary Ella Lunday Soule, who was head of the Women's Physical Education Department from 1925 to 1960. These funds are awarded to outstanding women students enrolled in the Department of Physical Education and Sport Studies based upon scholastic achievement and professional contributions. Two $1,000 awards are given each year, one each to a master's student and to a doctoral student.

Other Awards

Many departments have awards valued at less than $1,000 that are intended for students in that particular area of study. Please contact your department's graduate coordinator for additional information concerning these departmental awards.

Graduate Research Facilities

Centers and Institutes

Artificial Intelligence Center
Director: Dr. Donald Nute, (706) 542-0358.
The Artificial Intelligence Center is a multidisciplinary group dedicated to basic and applied artificial intelligence research, especially in knowledge representation, expert systems, natural language processing, neural nets, and genetic algorithms. The Center currently administers a master of science program in artificial intelligence. Fellows include faculty from the Franklin College of Arts and Sciences, the Terry College of Business, the College of Agricultural and Environmental Sciences, and the College of Education. The Center has additional Fellows from institutions in North America, Europe, and Australia. Visiting appointments are available to researchers with sabbatical or other support. The Center has a Worldwide Web page at www.ai.uga.edu. For further information, contact the Director, Artificial Intelligence Center,

111 Boyd Graduate Studies Research Center, The University of Georgia, Athens, GA 30602-7415 (dnute@ai.uga.edu). For information about the graduate program, contact Dr. Walter D. Potter at the same address (potter@cs.uga.edu) or Angie Paul (aspaul@ai.uga.edu).

Center for Advanced Ultra structural Research

Director: Dr. Mark A. Farmer, (706) 542-4080. The Center for Advanced Ultra structural Research serves the University System by providing a repository of facilities and expertise to assist in pursuing research and instructional needs employing light, fluorescence, and electron microscopy. Facilities include two TERMS, a Field Emission SEM, two confocal microscopes, X-ray micro analysis, and image processing and analysis workstations. Formal courses in microscopy are offered through the Division of Biological Sciences.

Center for Applied Isotope Studies

Director: Dr. John E. Noakes (706) 542-1395 The Center for Applied Isotope Studies is a multidisciplinary research facility that applies nuclear analytical technology to critical research problems in the emerging fields of environmental and marine sciences, biotechnology, and biomedicine, in addition to the basic physical and life sciences. Unique research capabilities include an accelerator mass spectrometer (AMS) that measures carbon isotopes at the atom level of detection. The CAIS AMS facility is the first in the Southeast and one of only two laboratories nationwide to direct efforts to the analysis of biomedical and environmental samples.

The CAIS places emphasis on innovative applied research, including the development of new AMS technology for carbon and tritium measurement; improved methods for low-level and ultra low-level liquid scintillation measurement of radioisotopes; new stable isotope techniques for food/flavor and hydrologic research; and aquatic survey instrumentation for environmental and marine resource applications. Inhouse analytical capabilities include radiocarbon dating, stable isotope measurements, trace element determinations, 60Co gamma irradiation, and radionuclide environmental monitoring and assessment.

The Center assists academic departments, research units, and individuals with specific problems related to instrumentation, methods, and techniques in isotopic analysis. State-of-the-art analytical capabilities offer University and industry researchers exceptional opportunities for multidisciplinary collaborative academic research, public-private partnerships, and joint product development. Offices and laboratories are located in the CAIS Building at 120 Riverbend Road. Website: www.uga.edu/cais/.

Center for Archaeological Sciences

Director: Dr. George A. Brook, (706) 542-2322. The Center for Archaeological Sciences promotes research between the humanities — archaeology, anthropology, and art history and the sciences — geology, geography, geochemistry, chemistry, and biology. The Center coordinates the research of university scholars in fields relating to archaeology and art history, facilitates collaboration with experts outside the university, serves as a resource center of laboratory equipment and technical support for archaeologists, art historians, and museums worldwide, and coordinates interdisciplinary undergraduate and graduate degree programs in the archaeological sciences.

Center for Asian Studies

Director: Dr. Farley Richmond, (706) 542-2089 and (706) 583-0627. E-mail: richmond@uga.edu. Website: www.asianstudies.uga.edu. The Center for Asian Studies exists to nurture and guide academic programs and exchanges on Asia for students, faculty, and appropriate staff members. While these programs focus on language and area studies, they also involve students and faculty from law, business, agriculture, education, journalism, veterinary medicine, as well as the arts and sciences. Specific purposes and programs focus on (1) curriculum planning, review, and development in modern Asian languages and related area studies; (2) a speakers' and visitors' program of distinguished Asianists to address and exchange ideas with students, faculty, and community on Asian topics; (3) student and faculty exchange agreements such as the ones recently concluded with Kansai Gaidai and Yokohama University in Japan and the established one at Kagoshima University in Japan; (4) development of library and related instructional and research facilities necessary for a credible academic program in Asian studies; (5) planning and application for external funding for Asian Studies at UGA; and (6) research and research collaboration on East Asia. A certificate program in East Asian Studies based on concentration in either Chinese or Japanese is available for graduate students and is administered jointly by CAS and the Center for Global Policy Studies.

Center for Biological Resource Recovery

Director: Dr. Lars G. Ljungdahl, (706) 542-7640.

The Center for Biological Resource Recovery is comprised of investigators from the departments of biochemistry and molecular biology, botany, microbiology, and marine sciences at the university and from the Richard B. Russell Agricultural Research Center. The Center puts special emphasis on the use of enzymes and microorganisms in the pulp and paper industry and in agriculture, but it is also committed to extending the biotechnology required for the use of microorganisms and their enzymes as inexpensive and energy-efficient catalysts for converting our main renewable resource, biomass to desired products, such as fuel and industrial feedstock chemicals. Studies include the physiology, biochemistry, genetics and ecology of bacteria and fungi that are important for biotechnological industries.

Center for Computational Quantum Chemistry

Director: Dr. Henry F. Schaefer III, (706) 542-2067.

The Center for Computational Quantum Chemistry seeks to develop theoretical and computational methods through mathematical models for describing and understanding the movement and function of electrons in molecules. Some of the theoretical methods under development include the configuration interaction, coupled cluster, and Brueckner methods and associated analytic gradient techniques. Additional theoretical work involves density functional theory, the evaluation of electron repulsion integrals, and the treatment of relativistic effects. Currently applications to several areas of chemistry are of special concern: (1) the potential energy hypersurfaces that govern elementary gas phase chemical reactions, including systems pertinent to combustion; (2) fundamental problems in physical organic chemistry involving, for example, carbenes and other biradical species and systems such as the [n] paracyclophanes and [10] annulene; (3) organosilicon chemistry, specifically the prediction and understanding of the properties of silicon analogs of both common and unknown hydrocarbon compounds; (4) hydrogen bonding in systems as complicated as the guanine-cytosine base pair; (5) the study of molecular anions, including systems pertinent to atmospheric and environmental chemistry; (6) chemical vapor deposition, a process critical to the microelectronics industry; and, (7) organometallic systems, especially polynuclear transitim metal carbonyls.

Center for International Trade and Security

Director: Dr. Gary K. Bertsch, (706) 542-2985.
E-mail: cits@uga.edu

Center for International Trade and Security (CITS) is an interdisciplinary and inter-university research, teaching, and service project designed to contribute to enlightened trade and security policies. CITS strives to produce policy-relevant research on political, economic, and security issues related to international trade and technology transfer. The center encourages and coordinates collaborative research, teaching, and service-related activities within the university, the state, the nation, and overseas. CITS currently directs international research projects on trade and security issues in the new independent states of the former Soviet Union, in Asia, in the United States and Europe.

Center for Latin American and Caribbean Studies

Director: Dr. Brent Berlin, (706) 542-1452;
Associate Director: Dr. Fausto O. Sarmiento, (706) 542-9079.
FAX: (706) 542-8432; E-mail: clacs@uga.edu;
Website: http://www.uga.edu/clacs/.

The Center coordinates interdisciplinary research, curriculum offerings, and public programs which deal with Latin America and the Caribbean. Through colloquia, conferences, small travel grants for students and faculty, and an undergraduate certificate program, the Center brings together researchers currently engaged in work in Latin America from all colleges and schools of the university.

Center for Metalloenzyme Studies
Co-Directors: Dr. Michael K. Johnson (706) 542-9378; Dr. Michael W. Adams, (706) 542-2060.
The Center for Metalloenzyme Studies was established to encourage interdisciplinary research to determine the roles of metals in biological systems and how metalloproteins are synthesized and regulated. Through collaborative research, discussions, and seminars, new insights are obtained concerning enzymes that catalyze life-supporting processes such as nitrogen fixation, respiration, photosynthesis, sulfur conversions, and hydrogen production. Use of the latest technologies and analytical equipment enables faculty of the center and its postdoctoral and graduate students to investigate the catalytic mechanisms of metalloenzymes at the molecular level. The center faculty organize state-of-the-art courses in inorganic biochemistry, biochemistry, enzymology, fermentation technology, as applied to metalloprotein production, structure, and function.

Center for Remote Sensing and Mapping Science
Director: Dr. Roy A. Welch, (706) 542-2359.
The Center for Remote Sensing and Mapping Science (CRMS) undertakes research and training in the fields of remote sensing, geographic information systems (GIS), photogrammetry, digital image processing, and computer graphics, particularly as applied to the physical and biological sciences. Typical research topics include quantitative methodologies for measuring soil erosion from agricultural lands by photogrammetric techniques, mapping environmental disturbances from aerial photographs and satellite images, development of integrated image processing/GIS software and advanced technologies for monitoring the earth's surface from digital image data. Close associations are maintained with remote sensing organizations and scientists in Canada, Europe, South America, and Asia. The CRMS provides technical assistance to universities and to local, state, and federal agencies.

Center for Simulational Physics
Director: Dr. David P. Landau, (706) 542-2909.
The Center for Simulational Physics functions as a center for research and training in simulational physics, with emphasis on the use of supercomputers and novel parallel architectures. Because of this work, close interaction with the Enterprise Information Technology Services is maintained, and collaborative research programs with major institutions in the United States, South America, Israel, and Europe are developed. The Center's staff consists of research and adjunct professors, visiting research scientists, and postdoctoral associates.

Complex Carbohydrate Research Center
220 Riverbend Road; Tel.: (706) 542-4401; Fax: (706) 542-4412. Website: www.ccrc.uga.edu.
Co-Directors: Dr. Peter Albersheim, (706) 542-4404; Dr. Alan Darvill, (706) 542-4411.
The Complex Carbohydrate Research Center (CCRC) includes a U.S. Department of Energy-funded Center for Plant and Microbial Complex Carbohydrates and a National Institutes of Health Resource Center for Biomedical Complex Carbohydrates. The Center's scientists study the structures and functions of the complex carbohydrates of plants, microbes, and animals to determine the role of carbohydrates in growth and development, host-pathogen interactions, and disease processes. The CCRC's 78,000 sq. ft. building is specifically designed for the interdisciplinary and equipment-intensive nature of carbohydrate science. Scientists at the CCRC investigate the chemistry and the physiological, developmental, and molecular biology of complex carbohydrates having biological importance using advanced analytical techniques, including mass spectrometry, nuclear magnetic resonance (NMR) spectroscopy, computer modeling, artificial neural networks, tissue culture, monoclonal antibodies, chemical and enzymatic

synthesis, and recombinant genetics. The CCRC provides analytical services to scientists, conducts annual extramural hands-on laboratory training courses, and develops computer software to assist the study of complex carbohydrates. MS and PhD students in the Departments of Biochemistry and Molecular Biology, Chemistry, and Plant Biology can apply to conduct their graduate research under the direction of a CCRC faculty member. CCRC personnel are presently engaged in more than 170 collaborations with scientists in North and South America, Europe, and Japan.

James M. Cox, Jr., Center for International Mass Communication Training and Research

Director: Dr. Lee B. Becker, (706) 542-5023.
The James M. Cox, Jr., Center for International Mass Communication Training and Research serves to facilitate international mass communication training and research programs in which scholars from the United States and foreign countries, students, and mass communication professionals can cooperate. The center helps to coordinate efforts to improve the state of knowledge in the field and to encourage practical training, education, and service projects.

Housing and Demographics Research Center

Director: Dr. Anne L. Sweaney, (706) 542-4877
The Housing and Demographics Research Center (HDRC) provides sound housing research, promotes a more rational regulatory environment for the building community, and disseminates research findings to policy-makers, interested parties, and the general public. The HDRC was created in partnership with the Research Center of the National Association of Home Builders and was officially recognized as a center in June of 1996. It is part of a network of housing research centers located regionally at major research universities. The faculty have garnered support from the Athens-Clarke County Government, Department of Community Affairs, Georgia Department of Human Resources, Georgia Department of Transportation, the National Association of Housing Counselors and Agencies, Inc., and SMART House Limited Partnership, Inc., among others.

Institute for Behavioral Research

Director: Dr. Rex L. Forehand, (706) 542-1806.
The Institute for Behavioral Research is a multidisciplinary research organization, the purpose of which is to encourage a pooling of the expertise of staff members and graduate students from various departments to attack significant social and behavioral problems at both basic and applied levels.

Staff members are assembled from a variety of departments from the College of Arts and Sciences, College of Education, College of Family and Consumer Sciences, and the School of Social Work. Staff members hold faculty rank in their respective departments and have a joint appointment in the Institute. Many hold research grants or contacts, and research assistants are appointed to further these and other ongoing research efforts. Current activities include research on health, family, workplace, environment, and cognition. IBR serves as an "umbrella" for several enterprises: the Survey Research Center, the Center for Research on Behavioral Health and Human Service Delivery, and the Center for Family Research. In addition, there is a contextual Research Group and a Models and Methods Group.

The Institute is housed in Barrow Hall, with ready access to the University Computer Center, a technical library, and related facilities.

The Institute does not confer degrees; however, students interested in the Institute's activities may correspond with the graduate coordinator of any department collaborating with the Institute or with the Director, Institute for Behavioral Research, The University of Georgia, Athens, Georgia 30602-2401.

Institute of Ecology

Director: Dr. C. Ronald Carroll, (706) 542-2968.
The Institute of Ecology was founded in 1961 to promote interdisciplinary research in ecology. The Institute currently administers a master's and doctoral program in ecology and an interdisciplinary master of science program in conservation ecology and sustainable development. A core administrative, technical, and professional staff is supported by state funds. Most of the support for the large research projects and for grad-

uate and post-doctoral students working on these projects comes from grants.

In addition to the faculty of the Institute, a larger affiliated membership represents many academic disciplines, coming from at least 20 University departments or schools. Besides these academic units, members are on the staffs of the Institute of Community and Area Development, the Institute of Government, the Savannah River Ecology Laboratory, and the Marine Science Program. Ecologists from the U.S. Forest Service and U.S. Environmental Protection Agency, who closely interact with Institute scientists, are also members.

The Institute has a long-standing and highly productive research and training relationship with the Savannah River Ecology Laboratory in Aiken, SC, and the U.S. Forest Service's Coweeta Hydrological Laboratory in Franklin, NC. The Institute also has research and academic relationships with the Joseph W. Jones Ecological Research Center in southwest Georgia. Additional field studies are also underway at Cumberland Island National Seashore, Sapelo Island, the Ogeechee River, the McGarity Wetlands, the Coastal Plains Experiment Station, Horseshoe Bend, and the Florida Keys; international field research sites include Costa Rica, Ecuador, Guatemala, Puerto Rico, the Philippines, and Burkina Faso. The Institute supports research in marine and freshwater ecology, radiation ecology, ecological toxicology, evolutionary ecology, conservation biology, landscape ecology, restoration ecology, agroecosystem ecology, and resource management. Graduate students participate in various Institute research projects. Their research usually contributes to their thesis or dissertation.

A special graduate student research program is offered through the University's Savannah River Ecology Laboratory (SREL). Funded by the U.S. Department of Energy, the laboratory is located on DOE's 250,000-acre Savannah River site. The site contains a variety of natural and disturbed habitats. Research is jointly supervised by the student's university research committee and SREL. Stipends are available. A predoctoral fellowship program is also available. All participants in SREL's educational program must be U.S. citizens.

Several researchers at the Jones Center hold faculty appointments in the Institute. For students working with these faculty, agreements to share student stipend costs have been made.

For additional information on the Institute of Ecology, contact Dr. C. Ronald Carroll, Institute of Ecology, The University of Georgia, Athens, Georgia 30602-2202. For additional information on the degree programs in ecology, contact Ms. Patsy Pittman, Ecology Program, Ecology Building, The University of Georgia, Athens, Georgia 30602-2202. Persons interested in SREL programs should contact Ms. Jannell Gregory, SREL, Drawer E, Aiken, South Carolina 29802.

Institute of Higher Education

Director: Dr. Delmer Dunn, (706) 542-3464.
Located in the historic Meigs Hall, the Institute of Higher Education is a research, instruction, and public service and outreach program of The University of Georgia. Many of the Instituteís activities are related to the improvement of postsecondary institutions and programs. Institute faculty participate in statewide, regional, and national studies of postsecondary policy, program development, instructional improvement, and assessment. The Institute collaborates with the Office of Instructional Support and Development in the Governorís Teaching Fellows Program to improve instruction in Georgia higher education institutions. It collaborates with the Graduate School in the Faculty Development in Georgia Program, which assists faculty members of Georgia colleges and universities in completing their graduate education. The Institute offers both an EdD and PhD in higher education.

Inquiries should be addressed to: Admissions Committee, Institute of Higher Education, Meigs Hall, The University of Georgia, Athens, Georgia 30602-6772.

Institute for Natural Products Research

Director: Dr. David E. Giannasi, (706) 542-5800.
The Institute for Natural Products Research carries out a broad range of research on naturally occurring substances of plant origin, with particular attention to plant species of Georgia and the Southeast. Projects involve research on alka-

loids, terpenes, antitumor agents, phytoalexins; the development of new synthetic methods; and the application of modern spectroscopic methods to structure elucidation problems. Research involves the isolation and elucidation of chemical structures of new compounds possibly useful as drugs for the treatment of human disease. The institute serves as a training center for visiting faculty and for postdoctorate and graduate students who are doing research in natural products.

Institute for Nonprofit Organizations

Directors: Dr. Thomas P. Holland (706-542-5463) and Dr. Jeffrey Brudney (706-542-2057). The Institute for Nonprofit Organizations provides an interdisciplinary group of graduate teaching, research, and service programs at UGA that focus upon improving the leadership and effectiveness of nonprofit organizations. The Institute offers an array of opportunities for students, professionals, and scholars of nonprofit organizations as well as those seeking careers in them. Its Master of Arts in nonprofit organizations degree program prepares students with knowledge and skills necessary for successful careers in the nonprofit sector. Its research projects develop and disseminate knowledge to strengthen the effectiveness of those already in leadership positions. For more information about the Institute, see our website: jag.itos.uga.edu/nonprofitinst.

Marine Facilities

Two units of the University of Georgia's School of Marine Programs, the Marine Extension Service and the Marine Institute on Sapelo Island operate extensive coastal facilities available for research and training in marine sciences. In addition, the School of Marine Programs' Department of Marine Sciences operates two freshwater research and educational facilities, one on Clarks Hill Lake at Mistletoe State Park and the other in the Okefenokee Swamp in collaboration with the Okefenokee National Wildlife Refuge.

The Marine Extension Service's education center and shellfish research laboratory are on Skidaway Island, near Savannah. The education center houses a 10,000-gallon teaching aquarium, educational exhibits, lecture rooms, four teaching laboratories, and two research laboratories. A 50-bed dormitory and dining room facility operate in support of the marine education program. The shellfish research laboratory has seawater and tank systems to hold brood stock, constant-temperature rooms to control spawning, and illuminated temperature-controlled chambers for maintaining stock algal cultures and mass algal culture systems. A modern, solar-efficient greenhouse was added in 1989 to produce algae. The Skidaway branch of the UGA Science Library occupies 6100 sq ft and has holdings of 18,000 volumes and 200 marine-related journal subscriptions. The Seadawg, a 42-ft converted lobster boat, makes about 300 short cruises a year in support of the education and research programs.

Other Marine Extension Service facilities include a fisheries research station on the waterfront in Brunswick. The 15,000-sq-ft Center for Fisheries Research was recently augmented with conference rooms and flexible space for conducting seminars and short courses, as well as additional laboratories for research addressing the problems of seafood processors and harvesters. The 73-ft research vessel, Georgia Bulldog, is based at the Center and used for gear research and marine biological sampling purposes.

The University of Georgia Marine Institute is located on Sapelo Island in a setting of diverse natural marine habitats. The Institute is a valuable resource, both in terms of research on the estuarine and nearshore environment and in implementing the training of students. Additional financial support is provided by the Sapelo Foundation, a private, charitable, nonprofit organization founded by the late Mr. R. J. Reynolds.

The Institute's resident staff consists of about 10 scientists, who hold appointments as adjunct professors in the Department of Marine Sciences, as well as a number of technical and support personnel. Members of the campus faculty and students, as well as scientists and students from other institutions, are in periodic residence at the Institute. Field trips and graduate research by campus-based groups are encouraged. Current research programs include energy flow, nutrient cycling, and factors regulating the metabolism of the salt marsh and nearshore ecosystems.

In 1976, under the Coastal Zone Management Act of 1972, the nation's second estuarine sanctuary was established encompassing the southern portion of Sapelo Island, the Duplin River, and adjacent wetlands and surrounding areas. The primary purpose of the sanctuary was to provide a natural area so that ecological relationships can be studied over the long term. The sanctuary is now known as the Sapelo Island National Estuarine Research Reserve and is managed by the Georgia Department of Natural Resources and funded by the National Oceanic and Atmospheric Administration.

In addition to the School of Marine Programs' coastal facilities, all of which are available for student research and training, the Department of Marine Sciences also maintains extensive research and instructional laboratory facilities on the main campus in Athens. These are equipped to conduct research on a wide range of marine-related physical, biological, chemical, and geological topics as well as on marine and coastal law and policy.

The department recently established an aquatic instructional and research station 90 minutes from Athens at Clarks Hill Lake, a large reservoir on the Savannah River near Augusta. The station has a 1000 sq. ft. instructional activities building, and is home base for small boats. The department also operates the 39 ft. research vessel Underdog, used to train students in marine and aquatic measurements and sampling techniques.

The Department of Marine Sciences maintains laboratory, office, and limited dormitory space in a modern modular building at the Okefenokee National Wildlife Refuse near Folkston, GA. The facility is operated in collaboration with the U.S. Fisheries and Wildlife Service and provides access to a wide range of open water, marsh, swamp, and upland wilderness habitats in the Okefenokee Swamp Ecosystem.

McPhaul Child and Family Development Center

Curriculum Coordinator: Dr. Lily Paguio, (706) 542-4929.

The McPhaul Child and Family Development Center provides developmentally appropriate programs for both university and community families with children 6 months to 5 years. Both half- and full-day programs are available. Half-day programs are for infants, toddlers, two-year old children as well as four-year old children in the Head Start program. Full-day programs exist for three- and for four-year-old children in a state-funded Pre-Kindergarten classroom. Children with a disability are served throughout the Center. The purpose of the center's programs are: (1) to provide training opportunities for university students in the Department of Child and Family Development as well as other academic units to observe and interact with young children and their families; (2) to conduct research on the development of children and families and ways to optimize their development; and (3) to provide a quality developmental program for young children and to channel other resources of the College of Family and Consumer Sciences to families.

Poultry Diagnostic and Research Center

Director: Dr. Stanley H. Kleven, (706) 542-5644.

The Department of Avian Medicine carries out basic and applied research programs on the diseases which are of economic importance to the poultry industry of Georgia. Diagnostic, laboratory, and consultative services are provided to individuals and groups in all phases of poultry production.

Dean Rusk Center - International, Comparative, and Graduate Legal Studies

Director: Professor Gabriel M. Wilner, (706) 542-5238.

The Dean Rusk Center - International, Comparative, and Graduate Legal Studies was founded in 1977 as part of the School of Law to improve the effectiveness of relations among citizens, private sector entities, and government at the local, state, federal, and international levels. Using advanced electronic information-processing techniques, the center's professional staff and part-time researchers mobilize university, business, and governmental resources to develop theoretical and practical approaches to improve the efficiency of governance, trade, and investment. On occasion the center also helps implement the approaches by providing the private and public sectors with essential manpower and information. The Dean Rusk Center has developed several major initiatives for federal action concerning North American cooperation and overseas trade regulation and representation. It also has analyzed new approaches for expanding Georgia agricultural exports. The center publishes research reports, holds conferences, and sponsors research for Georgia citizens that cover fiscal and monetary policy, international arrangements, and domestic affairs.

Torrance Center for Creative Studies
Director: Dr. Juanita Matthews-Morgan, (706) 542-5104.; e-mail: nitamm@uga.edu; or www.coe.uga.edu/edpsych/ docs1/gifted/docs1/ torrance.html.
The mission of the Torrance Center for Creative Studies is to promote scholarly inquiry into the study, development and evaluation of gifted and creative abilities in individuals from diverse age-groups, cultures, and economic backgrounds. Center activities are primarily designed to facilitate the completion of practicum and internship requirements by graduate students majoring in gifted and creative education. To signify completion of practicum and internship requirements, graduate students develop portfolios that contain records of the balanced set of experiences they have had in teaching, basic and applied research, and outreach. University of Georgia faculty, both inside and outside the Department of Educational Psychology and other local, state, regional, national, and international scholars are also involved in the research, instructional, and outreach (service) activities promoted through the Center. These activities include the Challenge Programs, the Future Problem Solving Program, and the E. Paul Torrance Lecture.

The Center maintains a comprehensive data base of information on giftedness, creativity, and futures studies from three major sources: (a) the clients who participate in Center programs and activities; (b) the work of Gifted and Creative Education faculty; and (c) the work of Dr. E. Paul Torrance, a pioneer in research on creativity, giftedness, and futures studies, and the person for whom the Center is named.

Research Organizations

Oak Ridge Associated Universities
Since 1948, students and faculty of the University of Georgia have benefitted from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of colleges and universities and a management and operating contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education, the DOE facility that ORAU manages, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of under represented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the Resource Guide, which is available at the worldwide web at www.orau.gov/orise/resgd/htm, or by calling either of the contacts below.

ORAU's Office of Higher Education Initiatives seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Junior Faculty Enhancement Awards and the Visiting Industrial Scientist Program, and various services to chief research officers.

For more information about ORAU and its programs, contact Dr. Gordhan L. Patel, ORAU Council member, at (706) 542-5969; contact Monnie E. Champion, ORAU Corporate Secretary, at (423) 576-3306; or the ORAU website at www.orau.org.

Organization for Tropical Studies

The Organization for Tropical Studies (OTS), a nonprofit scientific and educational corporation, was formed in 1963 by a group of educational institutions that have a long history of interest in developing tropical science. The fifty-six member institutions, which include Universidad de Costa Rica, University of California, University of Connecticut, Duke University, University of Florida, The University of Georgia, Harvard University, University of Hawaii, Indiana University, University of Kansas, Louisiana State University, University of Miami, University of Michigan, Michigan State University, University of Missouri, North Carolina State University, University of Ohio, Stanford University, Smithsonian Institution, University of South Carolina, Texas Technological College, University of Washington, and University of Wisconsin, are dedicated to the purpose of developing a sound educational and research program with adequate facilities and support to provide the base support for a massive effort in solving problems in tropical science. Initial emphasis was placed on biological sciences and closely allied fields, but activities have been expanded gradually to include other fields in which study may be most effectively carried out in the tropics.

The initial objectives of the OTS are:

1. to provide a sound formal educational base in tropical biology available to all interested students and scientists in the Americas;
2. to contribute to the education of students and scientists by providing basic background and facilities for tropical research;
3. to develop an educational center that will provide fundamental insight into the principles of tropical biology;
4. to develop an educational center that will provide an intellectual resource in science for the hemisphere; and
5. to stimulate and assist programs of education and research throughout the tropics, primarily through the education of competent tropical scientists.

To implement these objectives, OTS has established an educational center for tropical studies in Costa Rica. Central headquarters are in San Jose in association with the campus of the Universidad de Costa Rica, but the entire republic serves as a classroom and laboratory. Establishment of a network of field stations in appropriate tropical habitats where classes may meet continuously from one to several weeks is an integral feature of OTS planning. OTS is committed to the concept that in order to solve the problems of tropical education and meet the goals of the organization it is necessary to maintain a continuing program of course work presented in a rigorous and organized manner. Coordinated with the course program must also be a program of research to ensure maximum intellectual challenge.

Enrollment in OTS courses is based on national competition, with graduate students and recent postdoctoral faculty selected on the basis of academic record and interest in tropical studies. Descriptions of regularly presented courses and their prerequisites are given under listings in biology, forestry, and geography.

The University of Georgia Tropical Studies Group, with about 50 members in 19 departments, sponsors seminars and workshops on the campus in support of the OTS field program. Membership is open to graduate students and faculty.

Interested persons should contact Dr. Cathy Pringle, Institute of Ecology, or Dr. James L. Hamrick, Department of Botany, who serve on behalf of the University as members of the OTS Board of Directors.

Veterinary Medical Experiment Station

Director: Dr. Harry W. Dickerson, (706) 542-5734.

The Veterinary Medical Experiment Station coordinates and conducts research on disease problems of food- and fiber-producing animals, including poultry and fish. Companion animals, horses, and wildlife are also included. The research programs, which have applied, basic, and comparative medical orientation, are divided broadly into four main categories: infectious diseases, noninfectious diseases, diagnostic techniques, and therapeutic procedures. Research facilities are located at the College of Veterinary Medicine, the Poultry Diagnostic and Research Center, and the Veterinary Diagnostic Laboratories in Athens and Tifton. Opportunities for graduate training in the biomedical sciences are provided by the station's research programs.

Libraries

University Librarian: Dr. William Gray Potter, (706) 542-0621.

The University of Georgia Libraries are composed of three major on-campus libraries; the Main Library, the Science Library, and the Law Library (administered by the School of Law.) Several small collections include the Curriculum Materials Center (Education), the Georgia Center for Continuing Education library, the Veterinary Medicine reading room, and various lab collections. The UGA librariesí system also includes libraries at the experiment stations in Griffin and Tifton and the marine stations at Sapelo and Skidaway.

The UGA library is the largest library in the state of Georgia and serves as the Regional Depository for federal government publications. It is a member of the prestigious Association of Research Libraries (ARL) consisting of the largest research libraries in North America and ranks in the top 30 of these libraries. The libraries contain more than 3.7 million books, serials, and documents, plus many other items, including manuscripts, photographs, drawings, music scores, audio/video materials, and newspapers. The map collection incorporates nearly 600,000 items, and the microform collection numbers more that 5.6 million. Collections support the Universityís instructional, research, and public service activities and are available to users on campus and across the state.

An outstanding feature of the Main Library is the Hargrett Rare Book and Manuscript Library which consists of the Rare Book and Manuscript Library, the Georgiana Collection, and UGA Archives and Records Management. Subject interests include Georgia, Book Arts, Theater, Music, History, Literature, Journalism and Genealogy.

The Hargrett Library Rare Book unit contains approximately 120,000 rare books on a variety of subjects. Special emphasis is placed on rare books, maps, broadsides and other printed material dealing with the State of Georgia and the Southeast as the state developed from pre-Colonial times to the present. The manuscripts area of the Hargrett Rare Book and Manuscript Library is the repository for over 6 million individual items including family papers, diaries, letters, theatrical papers, corporate and organizational papers. The Georgiana Collection documents the ongoing history of the state of Georgia, its people and culture. It houses approximately 100,000 books by Georgians and about Georgia. UGA archives preserve over two centuries of the history of the University of Georgia in the form of official records, images, correspondence, plats, plans, publications, and artifacts.

The Walter J. Brown Media Archives & Peabody Awards Collection holds over 90,000 titles and 5 million feet of news film, making this one of the largest broadcasting archives in the country. This Archives comprises moving image and sound collections that focus on American television and radio broadcasting; and the music, folklore, and history of Georgia. There are over 50,500 television programs and 5 million feet of news film and over 39,500 radio programs in the Archives, in addition to audio folk music field tapes and home movies from rural Georgia.

The Richard B. Russell Library for Political Research and Studies is the only repository in Georgia directed solely toward support of scholarly research in modern political history, and it is the first repository to document modern politics and policy development in the Southeast. Given the scope and content of its collections, the Library arguably exceeds the importance of presidential libraries, and it has long served as a model for others collecting congressional collections. Some of the significant holdings, in addition to the collection of Senator Russell, are the papers of Secretary of State Dean Rusk; Undersecretary of Agriculture J. Phil Campbell; U. S. Senators Herman E. Talmadge, Mack Mattingly, Hoke Smith, and Thomas Hardwick; U. S. Representatives Dudley M. Hughes, Howard H. ìBoî Callaway, Williamson S. Stuckey, Sanford

Bishop, Johnny Isakson; as well as governors, state legislators and officials, and political activists and commentators. The Library is also the repository for the records of the state Democratic and Republican parties, the Georgia Public Policy Foundation, Leadership Georgia, and the ACLU Chapter of Georgia. These highly regarded collections from individuals and organizations involved in politics and public policy are widely used by local, national, and international researchers.

The University libraries offer a variety of electronic databases. The GALILEO system provides access to more that 300 databases, including indexes, abstracts, full-text journals electronic books, government publications, reference sources, and links to additional Internet-based resources. GIL, the libraries catalog, can be accessed in the library and remotely through a web connection. Statistical and government databases are available through the Data Services unit on the 6th floor of the main library. More than 460,000 volumes are housed in the Universityís law library, whose collection of British Commonwealth materials is considered one of the finest of its kind in the nation. Website: www.libs.uga.edu

Museums

The Georgia Museum of Art

Director: Dr. William U. Eiland, (706) 542-4662.

The Georgia Museum of Art, founded by Alfred H. Holbrook in 1948, serves the university, the community, and the state. In recognition of the museum's statewide significance and growing national prominence, the Georgia General Assembly designated it the official State Museum of Art in 1982. The permanent collection of the museum now numbers over 7,000 works, with emphasis on southern decorative arts and 19th- and early 20th-century American paintings and American and European prints and drawings from the 16th through the 21st century. The building is located in the Performing and Visual Arts Complex. Works in the collection and curatorial files are available for study by students and scholars. An active publications program includes a bimonthly museum newsletter and catalogues for selected exhibitions organized by the museum. The museum features highlights of its permanent collection and major traveling exhibitions, as well as temporary exhibitions of other works from its collection. Lectures, gallery talks, films, family days, and other events are scheduled to complement these exhibitions. The Museum Shop offers a variety of books, cards, and arts-related gifts.

The Georgia Museum of Natural History

Director: Dr. Elizabeth J. Reitz, (706) 542-1663.

The Museum of Natural History contains the most extensive collection of Georgia natural history artifacts and specimens and is one of the largest natural history museums in the Southeast. It ranks within the top 50 in the nation in terms of the size of its collections and the scope of its research and service programs. The museum comprises twelve separate collection areas: Archaeology Collection (3 million artifacts), Botany Herbarium (230,000 plant specimens), Arthropod Collections (963,000 insects), Geology Collections (20,000 economic specimens, and 10,000 invertebrate and vertebrate fossils), Julian H. Miller Mycological Herbarium (33,000 fungi), Pollen and Plant Microspores Laboratory (a worldwide collection of fossil pollen samples), Zooarchaeology Collection (4,800 comparative reference skeletons), Herpetology (47,000 specimens), Ichthyology (325,000 specimens), Invertebrates (34,000 specimens) Mammalogy (27,000 specimens), and Ornithology (6,000 specimens).

The Museum's collections are crucial to quality education in over 72 graduate and undergraduate courses in the natural sciences at the University. The educational role of the Museum extends well beyond the campus. Each year the Museum provides loans of educational materials and access to its collections to other institutions and the individuals within the University System, primary and secondary schools, and state agencies. Also, through specialized educational programs, lecture series, and short courses, the Museum reaches thousands of individuals and groups throughout Georgia each year.

The State Botanical Garden of Georgia

Director: Dr. A. Jefferson Lewis, III, (706) 542-1244; website: www.uga.edu/botgarden.

The State Botanical Garden is a public educational facility under the auspices of the University of Georgia. Its mission is to acquire and disseminate botanical knowledge and to foster appreciation, understanding, and stewardship of plants and nature through research, educational programs, plant collections, and horticultural displays. The Garden is located two miles south of campus. Founded in 1968, it now encompasses more than 300 acres, much of which borders the Middle Oconee River. The Garden features a number of specialty Gardens and collections plus five miles of nature trails. The modern Visitor Center/Conservatory features a permanent display of tropical and semitropical plants along with classrooms, a gift shop, café, and other visitor facilities. The adjacent International Garden includes an herb and physic garden, a bog garden, a collection of endangered plants of the southeastern United States, as well as representative species from the floras of the Mediterranean region, Latin America, China, and the southeastern states. The nearly 2,500 types of plants in the accessioned collections are about equally divided between species and cultivated varieties.

The Garden is a living laboratory for university teaching and research. Students and faculty utilize the collections and natural plant communities for studies in a variety of disciplines, including plant reproductive biology, vegetation analysis, ecosystem studies, plant pathology, animal behavior, taxonomy, plant physiology, horticultural trials, museum studies, and anthropology. Conservation programs at the Garden focus on rare and endangered species of Georgia and adjacent states. The Garden is a member of the Georgia Plant Conservation Alliance (GPCA), the American Association of Botanical Gardens and Arboreta (AABGA) and Botanic Gardens Conservation International (BGCI), the latter a worldwide network of botanical gardens and arboreta committed to conservation education and research. Students and faculty are encouraged to contact the Director of Research at (706) 542-6144 for further information concerning academic use of the Garden facilities.

General Degrees

General Degrees

Master of Arts (MA) and Master of Science (MS)

Master of Arts

The Master of Arts degree will be conferred upon candidates who have met the requirements of this degree with major study in one of the following fields: anthropology, art history, business administration, classical languages, comparative literature, economics, education, English, French, geography, German, Greek, history, journalism and mass communication, Latin, linguistics, mathematics, mathematics non-thesis, music, nonprofit organizations, philosophy, political science, religion, Romance languages, sociology, Spanish, and speech communication.

Master of Science

The Master of Science degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: agricultural economics; agricultural engineering; agronomy; anatomy (veterinary); animal science; artificial intelligence; biochemistry and molecular biology; biological engineering; botany; cellular biology; chemistry; child and family development; computer science; conservation ecology and sustainable development; dairy science; ecology; entomology; environmental economics; environmental health; food science; foods and nutrition; forest resources; genetics; geography; geology; horticulture; housing and consumer economics; marine sciences, medical microbiology; microbiology; pharmacology (veterinary); pharmacy; physics; physiology (veterinary); plant pathology; poultry science; psychology; statistics; textiles, merchandising, and interiors; toxicology; veterinary parasitology; and veterinary pathology.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Master of Arts or Master of Science degree upon recommendation of the major department and approval of the dean of the Graduate School.

2. *Residence.* The minimum residence requirement is two semesters which do not have to be consecutive.

3. *Time Limit.* All requirements for the degree must be completed within six years beginning with the first registration for graduate courses on the program of study. An extension of time may be granted only for conditions beyond the control of the individual.

4. *Research Skills Requirements.* Upon the option of the student's major department, a reading knowledge of a modern foreign language or other research skills may be required of a candidate for the Master of Arts or the Master of Science degrees. A prospective student should request information concerning the research skills requirements from the departmental graduate coordinator if the requirements are not described under the departmental heading in this bulletin.

5. *Advisory Committee.* Before the end of the first semester of residence and upon the recommendation of the departmental graduate coordinator, the dean of the Graduate School shall appoint an advisory committee for the student. The committee will consist of a major professor, as chairman, and two additional members. The major professor and at least one of the other members of the committee must be members or provisional members of the graduate faculty. Only faculty members of the rank of assistant professor or above, or the equivalent, are permitted to serve as committee members. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, reading and approving the thesis, and administering the final examination.

6. *Program of Study.* A student must complete a program of study which constitutes a logical whole. Master of Arts and Master of Science degrees require a minimum of 30 semester hours consisting of at least 12 semester hours of course work open only to graduate students (exclusive of 7000 and 7300). Please use asterisk (*) to designate 6000- and 7000-level courses open only to graduate students. A maximum of 6 hours of 7000 may be applied toward the minimum of 30 hours. A minimum of 3 hours of 7300 must be listed on the program of study.

The typed program of study must be submitted on the proper form with approval by the student's major professor, the departmental graduate coordinator, and the dean of the Graduate School. This step should be completed by Friday of the second full week of classes of the semester in which degree requirements are completed. Exception: If degree requirements will be completed during summer term, the program of study will be due by Friday of the first full week of classes in that semester.

7. *Acceptance of Credit by Transfer.* If graduate credit earned at an accredited institution constitutes a logical part of the student's program, transfer of credit may be allowed when recommended by the student's major professor and graduate coordinator, and when approved by the dean of the Graduate School. Such transfer of credit cannot exceed six semester hours and must fall within the time limit of the degree. No grade below B may be transferred. The courses to be transferred may not have been used in a degree program at another institution. Transfer grades are not used in calculating cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School by the midpoint of the semester in which the student plans to graduate.

8. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study.

9. *Thesis.* A candidate must submit a thesis which shows independent judgment in developing a problem from primary sources. (In the Departments of Mathematics and Statistics, the thesis requirement may be replaced by nine semester hours of graduate work in 8000-level courses.) The thesis shall be written under the direction of the student's major professor. The thesis must be approved by the major professor, who will distribute copies to the remaining members of the advisory committee and schedule a final examination. Written assent of two of the three committee members will be required before a thesis will be approved as ready for a final defense.

One complete formatted copy of the thesis must be electronically submitted to the Graduate School no later than four weeks prior to graduation for a format check. All requirements for the thesis must be completed no later than two full weeks prior to graduation. Instructions for typing the thesis may be obtained at the Graduate School website: http://www.gradsch.uga.edu

A candidate must register for at least three semester hours of thesis under the course number 7300. Instructions for preparing the thesis may be obtained on the Graduate School website: http://www.gradsch.uga.edu.

10. *Final Examination.* A final examination on the thesis is required of all Master of Arts and Master of Science candidates. That part of the examination dealing with the program of study may be written or oral; that part concerned with the thesis must be an oral examination. The final examination will be administered by the advisory committee, with the major professor serving as chairman. All members of the advisory committee must be present. An abstention is not an appropriate vote for the defense of the thesis or the final exam. Thesis approval can have no more than one dissenting vote.

11. *Submitting the Thesis.* The Graduate School must receive the Final Defense Approval form and an electronic submission of the corrected thesis no later than two weeks prior to graduation. This official copy of the thesis will be electronically submitted by the Graduate School to the main library for archiving. A graduate student may not submit a thesis to the Graduate School for format checking or the dean's approval between the last day of classes and late registration of the following term.

12. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must enroll for a minimum of three hours of credit the semester in which he/she completes degree requirements unless additional stipulations are required by other units of the university.

Doctor of Philosophy (PhD)

The University established this degree for the purpose of providing properly qualified students with the opportunity to pursue research and other scholarly activities beyond the point that is possible in programs for the masterís degree. At present, opportunity for such advanced graduate work is provided in adult education, agricultural economics, agronomy, animal and dairy science, animal nutrition, anthropology, art, biochemistry and molecular biology, biological and agricultural engineering, botany, business administration, cellular biology, chemistry, child and family development, communication sciences and disorders, comparative literature, computer science, counseling and student personnel services, counseling psychology, drama, early childhood education, ecology, economics, educational psychology, elementary education, English, entomology, exercise science, food science, foods and nutrition, forest resources, genetics, geography, geology, health promotion and behavior, higher education, history, horticulture, housing and consumer economics, instructional technology, language education, linguistics, marine sciences, mass communication, mathematics, mathematics education, medical microbiology, microbiology, middle school education, music, occupational studies, pharmacology (veterinary), pharmacy, philosophy, physical education and sport studies, physics, physiology (veterinary), plant pathology, political science, poultry science, psychology, reading education, recreation and leisure studies, Romance languages, science education, social foundations of education, social science education, social work, sociology, special education, speech communication, statistics, textile sciences, toxicology, veterinary parasitology, and veterinary pathology.

This degree will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough acquaintance with a specific field of knowledge, not upon completion of any definite amount of work prescribed in advance. Evidence of such attainment must be provided through the presentation of an acceptable dissertation based upon independent research and the passing of such written and oral examinations as may be prescribed.

Departments that have been approved to offer the Doctor of Philosophy degree may implement this degree program by the adoption of appropriate rules and regulations. Departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Doctor of Philosophy degree upon certification by the major department that he or she is a person of proper attainment and promise, that appropriate courses may be adequately given, and that the student's research can be adequately supported and directed. Such admission must be to an authorized field and must be approved by the dean of the Graduate School.

2. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least two consecutive semesters of full-time work (i.e., enrollment for a minimum of 30 hours of consecutive course work included on the program of study) must be spent in resident study on this campus. Undergraduate courses taken either to fulfill research skills requirements or to remove deficiencies may not be calculated in the 30 consecutive hours of resident credit.

3. *Time Limit.* All requirements for the degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement dates from the first registration for graduate courses on a student's program of study.

A candidate for the Doctor of Public Administration degree who fails to complete all degree requirements within five years after passing the comprehensive examination, and being admitted to candidacy, will be required to take the comprehensive examinations again and be admitted to candidacy a second time.

4. *Research Skills* Requirements. To pursue research effectively a student must develop a facility with certain research skills or tools such as statistics, computer science, or foreign languages. The student's major department determines the skill or skills required of candidates for the Doctor of Philosophy degree. A prospective student should request information concerning research skills requirements from the departmental graduate coordinator if the requirements are not described under the departmental heading in this bulletin.

5. *Grade Average*. To be eligible for graduation, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study.

6. *Advisory Committee.* Before the end of the first year of residence of a prospective candidate for the Doctor of Philosophy degree and upon the recommendation of the departmental graduate coordinator, the dean of the Graduate School shall appoint an advisory committee for the student. The committee must consist of a minimum of three graduate faculty members. Provisional graduate faculty may serve in the same capacity as regular graduate faculty but **cannot** serve as chair or co-chair of the committee. Additional voting members may be appointed to the committee as approved by departmental policies, including no more than one non-UGA faculty, who must hold the terminal degree in their field of study. If there are more than three members, there must be greater than 50% graduate faculty representation. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student's defense of his or her research. The committee should advise the student of required research skills and other requirements.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of the department.

7. *Programs of Study.* A preliminary program of study, developed by the major professor and the doctoral student and approved by a majority of the advisory committee, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study should consist of 16 or more hours of 8000- and 9000-level courses in addition to research and dissertation writing.

The program of study for a student who bypasses the masterís degree must contain a minimum of 20 semester hours of University of Georgia courses open only to graduate students. Doctoral research (9000), independent study courses, and dissertation writing (9300) may not be counted in these 20 hours.

A final typed program of study will be submitted to the Graduate School prior to notification of the comprehensive examination. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program and not just courses satisfying the minimum degree requirement. Courses from the master's degree and courses taken at other universities should be listed in the "Relevant Master's or Other Graduate Degree Courses" section of the program of study form. The program of study must carry a minimum of 30 hours of course work, three hours of which must be dissertation writing (9300).

The department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of the first year of study in order to advise the student whether or not to continue in the program.

8. *Acceptance of Credit by Transfer.* If graduate credit earned at an accredited institution constitutes a logical part of the student's program, transfer of credit may be allowed when recommended by the student's major professor, advisory committee, graduate coordinator, and when approved by the dean of the Graduate School. Such transfer of credit cannot exceed nine semester hours and must fall within the time limit

of the degree. No grade below B may be transferred. The courses to be transferred may not have been used in a degree program at another institution. Transfer grades are not used in calculating cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the time the student plans to graduate. **No courses taken prior to the student's admission to their degree program at The University of Georgia are eligible for transfer.**

9. *Comprehensive Examinations.* A student must pass formal, comprehensive written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's advisory committee.

The written comprehensive examination, although administered by the advisory committee, may be prepared and graded according to the procedures and policies in effect in the student's department. The oral comprehensive examination will be an inclusive examination within the student's field of study. An examination of the student's dissertation prospectus (proposal) may precede or follow the oral comprehensive examination but may not take the place of the oral comprehensive examination. All members of the student's advisory committee must be present simultaneously for the oral examination and prospectus (proposal) presentation.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of the examination at least two weeks before the date of the examination.

Following each examination, written and oral, each member of the advisory committee will cast a written vote of pass or fail on the examination. To pass each examination, the agreement of the advisory committee is achieved with no more than one dissenting vote. An abstention is not an appropriate vote for the comprehensive examination. The results of both examinations will be reported to the Graduate School within two weeks following the oral examination.

10. *Admission to Candidacy.* The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School at least two full semesters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

(1) all prerequisites set as a condition to admission have been satisfactorily completed;
(2) research skills requirements, if applicable, have been met;
(3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
(4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the final program of study);
(5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
(6) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointment;
(7) a dissertation prospectus has been approved (if required for candidacy); and
(8) the residence requirement has been met.

After admission to candidacy, a student must register for at least two additional semesters and a total minimum of ten hours of dissertation or other appropriate graduate credit. A student must register for a minimum of three hours of credit in any semester when using University facilities, and/or faculty or staff time.

Once a student has been admitted to candidacy, the department has an ethical responsibility to ensure that appropriate faculty mentorship is provided to the candidate for completion of the degree.

11. *Dissertation Planning.* A student pursuing this degree must present a dissertation on some subject connected with his or her major field of study. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study. The

conclusions must be logical, the literary form acceptable, and the contribution to knowledge meriting publication.

Persons who serve on the advisory committee at the time the dissertation research is undertaken must be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student. This formal consideration may not take the place of the comprehensive oral examination.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of the advisory committee with no more than one dissenting vote as evidenced by their signing an appropriate form, which, together with the approved prospectus, is filed with the graduate coordinator.

12. *Dissertation Approval and Defense*. When the major professor is satisfied with the completed dissertation, he or she will certify that it has his or her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee and schedule a final oral defense. The graduate coordinator must notify the Graduate School at least two weeks prior to the defense. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members must have three weeks to read and evaluate the completed dissertation.

Written assent of the committee members (other than the major professor) will be required before a dissertation will be approved as ready for a final defense. No more than one dissenting vote may be allowed for the approval of the dissertation. If the advisory committee declines to approve the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation will be chaired by the student's major professor and attended by all members of the advisory committee simultaneously. It is open to all members of the University community. The advisory committee must approve the student's dissertation and defense with no more than one dissenting vote and must certify their approval in writing. An abstention is not an appropriate vote for the final defense. The results of the defense of the dissertation must be reported to the Graduate School at least two weeks prior to graduation for the current semester.

Once the dissertation has been approved by the advisory committee and the final oral examination has been passed, the dissertation must be submitted to the Graduate School for final approval no later than two weeks prior to graduation of the following semester. Dissertations which are not submitted by this deadline must be defended again and approved by the advisory committee before they will be considered by the Graduate School for final approval.

13. *Submitting the Dissertation*. One complete formatted copy of the dissertation must be electronically submitted to the Graduate School for a format check no later that four weeks prior to graduation.

The Graduate School must receive the Final Defense Approval form and an electronic submission of the corrected dissertation no later than two weeks prior to graduation. This official copy of the dissertation will be electronically submitted by the Graduate School to the main library for archiving.

A graduate student may not submit a dissertation to the Graduate School for format checking or the dean's approval between the last day of classes and late registration of the following term.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must enroll for a minimum of three hours of credit the semester in which graduation requirements are completed unless additional stipulations are required by other units of the university.

Interdisciplinary Program

Toxicology

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The Toxicology Program is an interdisciplinary program designed to train students to assume positions as toxicologists in academia, industry and government. The faculty participants come from a number of departments to which persons may apply for admission. These include clinical and administrative pharmacy, ecology, entomology, environmental health science, foods and nutrition, forest resources, medical microbiology, pathology, pharmaceutical and biomedical sciences, physiology and pharmacology, and poultry science. The Toxicology Faculty cooperate both in graduate training and in collaborative research. Thus, graduate students interact with scientists from different disciplines and have the opportunity to specialize in one of a number of areas.

Toxicology is the study of harmful effects of chemicals on humans and other living organisms. It is inherently a broad, multi-disciplinary field requiring expertise in a number of biological sciences. In recognition of this breadth, the program has two parallel tracks: (a) human and animal toxicology; and (b) environmental toxicology. The focus of each track is different, but there is overlap of prerequisites and core course requirements. Courses listed under a number of departments are available for the program. Required courses for the human and animal track include biochemistry, physiology and pathology. Requirements for the environmental track include biochemistry, environmental chemistry, and population and ecosystem ecology. Principles of toxicology, chemical toxicology, and graduate seminar are required courses for both tracks. Other core courses for the environmental tract are aquatic toxicology and quantitative ecological toxicology. The organ system toxicology course is required for the human and animal track. Students may select from a variety of electives according to their own interests and program of study.

Graduate students may obtain a Master of Science or Doctor of Philosophy, with a major in toxicology. Individuals can initially contact the Graduate Coordinator of the Interdisciplinary Graduate Program in Toxicology for information. Visits will be set up with faculty working in a person's area(s) of interest. Applications for admission can be made to either to the toxicology program or the home department of the faculty member with whom the applicant wants to work. The student is assisted in selecting a program of study and research topic by an advisory committee chaired by the major professor. Each student must pass a written and an oral qualifying examination. After being admitted to candidacy, a thesis or dissertation must be completed. The successful candidate who majors in toxicology will receive a master's or doctorate degree through the home department of his/her major professor.

Professional Degrees

Professional Degrees

Master's Degrees

General Requirements

Listed below are the general requirements governing professional master's degree programs. For policies pertaining to the Master of Laws (LLM) degree, which deviate from these general requirements, see the LLM program description.

1. *Admission.* An applicant may be admitted as a prospective candidate for a professional degree upon the recommendation of the major department and approval of the dean of the Graduate School.

2. *Residence.* The minimum residence requirement for most professional master's degrees is two semesters, which do not have to be consecutive. See the following program descriptions for specific requirements.

3. *Time Limit.* All requirements for a professional master's degree must be completed within six years beginning with the first registration for courses on the student's program of study. An extension of time may be granted only on conditions beyond the control of the student.

4. *Language Requirement.* A candidate for a professional master's degree is required to show correctness and good taste in the use of both written and spoken English.

5. *Program of Study.* A program of study should be prepared by the student and the major professor during the student's first semester in residence. This program of study, approved by the major professor and the graduate coordinator, must be submitted to the Graduate School by Friday of the second full week of classes of the semester in which degree requirements are completed. If degree requirements will be completed during summer term, the program of study is due by Friday of the first full week of classes.

6. *In-Service Credit.* A maximum of 18 hours of graduate in-service course credit taken at nonresident centers may be included in certain programs. This maximum will be reduced by any credit transferred from another institution. A student is responsible for contacting the department in which he or she is enrolled to ascertain if in-service courses are acceptable on the program of study.

7. *Accepting Credit by Transfer.* Graduate work taken at an accredited institution which constitutes a logical part of a student's program of study may be transferred if recommended by the student's major professor and graduate coordinator and approved by the dean of the Graduate School. Such transfer of credit cannot exceed six semester hours, cannot reduce residence requirements, and must fall within the time limit of the degree. No grade below B may be transferred. The courses to be transferred may not have been used as part of the requirements for another degree. Transfer grades are not used in calculating semester and cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least by midpoint of the semester in which the student plans to graduate. A combination of in-service and transfer credit may not exceed 18 semester hours on any program of study.

8. *Thesis.* If a thesis is required for a professional master's degree, inquiry should be made to the appropriate department concerning procedures to be followed.

9. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study.

10. *Final Examination.* The candidate must pass a final examination administered by the department. If an oral examination is given, it must be administered by a committee of no fewer than three faculty members. The results of this examination must be reported to the Graduate School by the major professor. This requirement has been waived for degrees offered in the Terry College of Business.

11. *Registration Requirement.* A student must be registered at the University of Georgia for a minimum of three hours of credit the semester in which all degree requirements are completed,

unless additional stipulations are required by other units of the university.

12. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation.

Program Descriptions

Master of Accountancy (MAcc)

There are two graduate accounting programs: the Master of Accountancy (MAcc) and the Five-Year Program (BBA/MAcc). Each evaluates students based on a review of accounting grades, overall grades, test scores, letters of recommendation and other factors that indicate success in the accounting profession. The graduate course requirements for both programs are the same. Request an application/information packet for the latest statement on the minimum requirements to be considered for admission.

The MAcc program is a standard, post-baccalaureate degree. Students must have completed an undergraduate degree from an accredited institution before enrolling in the MAcc program. Students applying for admission to the MAcc program are expected to complete a foundation of business and accounting courses.

The Five-Year Program allows outstanding UGA accounting students to begin Graduate School during their fourth (senior) year. Students complete their final two years of study as graduate students and hence may be considered for a graduate assistantship during their enrollment. Please contact the Program Coordinator for details.

Based on a student's intended area of specialization, the MAcc program consists of the following courses beyond the basic accounting and business prerequisites. Guidance is provided by the school regarding specific prerequisites and requirements.

Audit, Systems, or Managerial Track

- ACCT 7030 Advanced Financial I
- ACCT 7410 Tax II
- ACCT 7740 Accounting Policy & Research
- Nine hours from: ACCT 8050, Financial Statement Analysis and
  - ACCT 8100, Cost II
  - ACCT 8200, Audit II
  - ACCT 8300, Systems II
  - ACCT 7800, Internship (maximum of 6 hours)
- Twelve hours of MBA Electives as determined by the chosen track.

Tax Track

- ACCT 7030 Advanced Financial I
- ACCT 7420 Partnership Tax
- ACCT 7430 Estate & Gift Tax
- ACCT 7440 Corporate Tax I
- ACCT 7730 Tax Policy & Research
- Six hours from

either ACCT 8440 Corporate Tax II
and 3 hours from: ACCT 8050, Financial Statement Analysis
ACCT 8100, Cost II
ACCT 8200, Audit II
ACCT 8300, Systems II
or: ACCT 7800, Internship (maximum of 6 hours)

- Nine hours of MBA Electives as determined for the tax track

Master of Agricultural Economics (MAE)

This degree is designed for students who wish to acquire specialized training in agribusiness. The program blends business and economics with the applied science of agriculture, providing methods for solving real-world problems. An internship and technical report are required in lieu of a thesis.

Master of Agricultural Extension (MAExt)

This degree is designed especially for cooperative extension workers, agricultural educators, and other continuing educational professionals engaged in informal educational settings. In addition to general Graduate School requirements, a baccalaureate degree appropriate to one's work and one year of field experience in cooperative extension, or its equivalent, is desired before a prospective candidate may begin the program. Candidates must complete an approved program of 36 semester hours of graduate work.

A master's report or thesis is required. The content of the problem or analysis must relate to needs within the field of extension education.

Master of Applied Mathematical Science (MAMS)

The Master of Applied Mathematical Science is a terminal degree program designed for students who seek a broad training in applied quantitative methods as preparation for professional employment in business, government, or industry. For such students, this program will provide a structure that blends various applied mathematical sciences with particular reference to their application to real-world problems.

The program of study includes 30 semester credit hours of graduate courses. In lieu of a thesis, students in the program are required to prepare a technical report. The preparation of the technical report will provide the student with an opportunity to apply the tools of the mathematical sciences to one or several problems of interest, by developing appropriate models, obtaining needed data, and analyzing the results for their decision implications. The technical report must be filed with the student's department.

Three distinct options, at three different locations on campus, are available to accommodate students with different career goals. A student may apply for MAMS study with concentrations in: (1) applied mathematics in the Department of Mathematics, (2) statistical analysis in the Department of Statistics, or (3) computer science in the Department of Computer Science. All candidates for the degree must satisfy as prerequisites one year of calculus, a course in linear algebra, an introductory course in statistical methods, and two in computer programming. Additional prerequisites are required for some options. If the student has not completed all prerequisites, he or she must complete them early in the program. Courses taken to meet prerequisites may be graduate or undergraduate courses, but may not be applied to the program of study for the degree.

Master of Art Education (MAEd)

The Master of Art Education degree is designed for art teachers and supervisors of art with course work in curriculum, instructional methodology, and educational research along with theoretical, historical, and psychological foundations of art in education. Students may select courses in studio, art history and aesthetics, and criticism as part of their program. The program requires 33 semester hours of course work, including ARED 7650, Applied Project in Art Education. Prerequisite for admission is a bachelor's degree in art or art education. (See MED degree description for details.)

Master of Arts for Teachers (MAT)

The Master of Arts for Teachers program is designed to prepare teachers for employment in secondary schools and junior colleges. The degree may be earned in English, French, German, Romance Languages, and Spanish. There is no thesis or language requirement.

In general, admission requirements for programs leading to the Master of Arts for Teachers degree are the same as admission requirements for programs leading to the Master of Arts degree. Applicants should contact the department in which they plan to enroll for information concerning admission to specific programs. In addition to departmental admission requirements, all applicants for the MAT program must hold a baccalaureate degree from an accredited college or university, with an undergraduate major of at least 35 semester hours in the appropriate field of study.

Each student will be required to meet the following program requirements before being granted the MAT degree:

(1) complete 24 hours of graduate course work in the subject area, with approval of the student's academic department;
(2) complete 9 semester hours of graduate course work in education and related fields, with approval of the appropriate department in the College of Education;
(3) pass a final comprehensive examination covering course work and a reading list; and
(4) receive training in methods of research in the appropriate subject field.

The Master of Arts for Teachers degree program has not been approved for certification by the State Department of Education in Georgia. Any question relating to certification for teaching in the public schools should be addressed to the Department of Education in the state in which employment is sought.

Master of Avian Medicine (MAM)

This degree is designed to provide veterinarians with specialized training in the diagnosis, treatment, and prevention of poultry diseases. The degree is open to students who hold the Doctor of Veterinary Medicine degree or its equivalent.

Candidates for this degree must complete a program of study which meets departmental and graduate school requirements. To complete requirements, the candidate must stand for an oral examination before the faculty of the department of Avian Medicine. No thesis or foreign language is required.

Master of Business Administration (MBA)

Applicants with baccalaureate degrees in any field of study are eligible to apply to the MBA program. Students with undergraduate business degrees from AACSB-accredited institutions are eligible to apply to an accelerated 11-month program option consisting of a minimum of 41 semester hours. Non-business and business majors are eligible to apply to the two-year program. All students are expected to enter the program computer proficient.

The 11-month program begins in the summer. During summer all 11-month students take a set of five required courses and two electives. During the regular academic year, the format of the 11-month program is identical to the second year of the two-year program.

The first year of the two-year curriculum consists of required core course work. These courses provide the student with basic analytical tools as well as the functional and managerial skills necessary to deal with today's business problems. This background provides the student with a basic understanding of organizations and the role of managers in these organizations.

The second year consists of sequence and elective courses. Each department in the Terry College of Business offers sequences which students use to develop expertise in two or more areas. Students are required to complete two sequences of at least six hours each. In addition, each student must complete at least one international business course unless he/she can document international experience or previous course work in international business. Electives can be taken toward the goal of strengthening sequence areas or as a way to develop breadth across functional lines.

Two-Year Curriculum

First-Year Courses

Fall Semester:
Financial Accounting
Applied Business Statistics
Business Economics (Micro & Macro)
Developing Leadership Skills
Management Information Systems
Business Ethics⁺
Team Development, Facilitation, and Technology⁺
Negotiation⁺

Spring Semester:
Finance Management
Marketing Management
Integrated Resource Management II
Legal & Regulatory Environment of Business
Strategic Management and Communication
Internal Uses of Accounting Information

Second Year Courses

Fall Semester:
Sequence 1, course 1
Sequence 2, course 1
Free elective or sequence 3 course
Free elective or sequence 4 course
International course or free elective
MBA P.L.U.S. activities

Spring Semester:
Sequence 1, course 2
Sequence 2, course 2
Free elective or sequence 3 course
Free elective or sequence 4 course
International course or free elective
MBA P.L.U.S. activities

⁺ = taken in three weeks prior to the official start of fall term

11-Month Curriculum

The 11-month MBA program is designed to meet the needs of students with an undergraduate degree in business. Entering students are expected to enter the program computer proficient.

Summer Term:
First 3½ weeks module:
Business Ethics*
Negotiation*
Team Development, Facilitation, and Technology*
Business Statistics*

Second 3½ weeks module:
Marketing Management**
Financial Management**
Survey of Economics**
Management Information Systems Overview**
Strategic Management and Communication*

Fall/Spring Semesters: Same as the second year of the Two-year Program.

Note: The Business School requires applicants to submit information in addition to that required by The Graduate School. Files will not be reviewed by the Terry College of Business until they are complete. Inquiries concerning the MBA program may be made by writing or calling: MBA Program, Terry College of Business, 346 Brooks Hall, The University of Georgia, Athens, Georgia 30602-6264, (706) 542-5671. E-mail: terrymba@terry.uga.edu; internet: www.terry.uga.edu/mba.

Master of Crop and Soil Sciences (MCSS)

This is a professional degree program met by the completion of a minimum of 33 semester hours of course work. The areas of concentration are crop science and soil science. The course work includes 3 hours of internship with a commercial consultant, researcher, or extension specialist; or complete a special problems course with the intent of training in problem solving. Degree objectives depend on the student's interests and may include: understanding ethical and legal perspectives of agriculture and environmental sciences; global developments in sustainable agriculture, biotechnology, and environmental sciences; or basic business and economic principles of the disciplines. Each student will complete a comprehensive written and oral exam. No thesis is required.

Master of Education (MED)

The Master of Education degree is designed for the student whose vocational objectives require preparation for teaching, supervising, counseling, and/or first line administration in grades P-12 and other educational or professional agencies.

This degree is offered in the following fields: adult education, agricultural education, business education, college student affairs administration, communication sciences and disorders, early childhood education, educational leadership, educational psychology, English education, exercise science, family and consumer sciences education, guidance and counseling, health promotion and behavior, human resource and organizational development, instructional technology, marketing education, mathematics education, middle school education, occupational studies, physical education and sport studies, reading education, recreation and leisure studies (plan B), science education, social science education, special education, teaching additional languages, and technological studies.

Students who contemplate becoming candidates for this degree should contact the appropriate school, division, or department in the College of Education as to the program to be followed. This degree may be attained through either of the two following plans of work:

PLAN A

The requirements for the degree of Master of Education may be met by the completion of an approved program of a minimum of 33 semester hours of graduate course work. Under this plan, the following two courses must be included in the student's program: a research course and 7650-Applied Project in Education. A maximum of 15 hours of non-resident in-service credit is allowed on the program of study.

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* Required course.

** Elective course—Students will take two of four, based on previous course work and planned sequences.

PLAN B

Under this option, the requirements for the Master of Education degree may be met by a minimum of 36 semester hours of approved graduate course work. A research course must be included in the student's program. A maximum of 18 hours of non-resident in-service credit is allowed on the program of study.

Master of Family and Consumer Sciences (MFCS)

This program is available for students in the Department of Child and Family Development and the Department of Foods and Nutrition who are seeking master's level training that specifies that the training is in family and consumer sciences. Basic admission requirements are essentially the same as those required for admission to the Master of Science programs of either department. The minimum requirement for the degree of Master of Family and Consumer Sciences is an approved program of 36 semester hours with two semesters of resident study. The program of study must include the appropriate 7210 course on which an acceptable written report must be presented.

Master of Fine Arts (MFA)

The basic requirements for this degree are satisfactory completion of an approved program of graduate course work including a creative project or problem which will carry three hours credit.

In *art*, emphasis will be placed upon a high degree of technical and artistic accomplishment. The student must also have a general knowledge of art history and criticism. Current minimum course requirements are 57 semester hours of approved graduate course work plus 3 hours of ARST 9210, Graduate Exit Studio. ARST 9210 consists of an exhibition of creative work, a written report descriptive of the issues the candidate's work addresses, and a final oral examination. Concentrations are available in ceramics, drawing and painting, fabric design, interior design, jewelry and metalwork, photography, printmaking, and sculpture. The prerequisite for a program in art is the Bachelor of Fine Arts or its equivalent.

In *drama*, emphasis will be placed not only upon a high degree of technical and artistic accomplishment but also on a general knowledge of relevant history and literature. The program calls for a minimum of 60 semester hours. For persons already holding a master's degree in drama, up to six of these hours may be waived. Concentrations are available in acting, design/technical theater, dramatic writing, and dramatic media. The prerequisite for a program in drama is the Bachelor of Arts or its equivalent.

Master of Food Technology (MFT)

Potential students for this program are working professionals who will pursue the degree on a part-time basis. This program provides advanced training for students seeking to upgrade their knowledge to prepare for new job responsibilities or career advancement. In the MFT, a formal research project resulting in a thesis is not required, and the emphasis is placed on course work that prepares the student to specific career challenges. Course work is designed to prepare students to ensure processing plant operations, to ensure food product and process quality and safety, to implement good manufacturing practices, to conduct product development programs, to be knowledgeable of current technological issues, and to communicate to professionals, colleagues in various disciplines and the general public.

Applicants with a baccalaureate degree and two years of industry experience are eligible to apply to the MFT program. The MFT program consists of 30 semester hours of course work to include 3 hours of a special topics research paper, biochemistry and statistics. At the end of the course work and completion of the research paper, each student will take a comprehensive written and oral exam, administered by a faculty committee appointed by the department head.

Master of Forest Resources (MFR)

The Master of Forest Resources degree is an approved program of 33 semester hours of graduate credit. At least 12 of these hours must be in forest resources and form a logical major. At least 9 hours must be taken outside the field of forest resources. No thesis is required.

An MFR degree also may be obtained through the Joint BSFR/MFR Degree (2+3) Program. In this program, outstanding undergraduate students majoring in Forestry or Forest Environmental Resources may be admitted into the MFR program at the end of their first year in the Professional program, and work toward completion of the BSFR and MFR degrees simultaneously. Please contact the Forest Resources Graduate Program Officer for further details.

Master of Historic Preservation (MHP)

Consistent with the multi-disciplinary nature of historic preservation, persons with baccalaureate degrees in architecture, landscape architecture, urban planning or design, interior design, art history, social history, law, archaeology, real estate, economics, or related disciplines are eligible to apply to the MHP program. The MHP program is designed to prepare students for a wide range of careers in the conservation and management of historic resources in both the built and natural environments. The two-year course of study is structured to develop versatile, competent, and highly motivated professionals who can perceive preservation opportunities in the broadest sense and who can develop strategies ensuring the protection and use of cultural resources as a part of the fabric of urban and rural environments. The MHP program will provide students, from diverse academic backgrounds, a common concept of preservation philosophy and process through an intensive, community-oriented, practical educational experience which effects a balance between academic and professional training.

Accelerated Master of Historic Preservation

With admission limited only to individuals with an undergraduate degree in historic preservation (from a National Council for Preservation Education member institution), this program requires a minimum of 30 hours of study plus a thesis. Individual courses of study are developed, based upon analysis of the applicant's undergraduate program of study and the skills necessary to prepare students for careers as historic preservation professionals. Individuals qualifying for this degree are urged to contact the program director.

Master of Internet Technology (MIT)

This degree is designed to produce graduates capable of working in the rapidly growing fields of electronic commerce and Internet development as designers, software developers, managers and consultants. The knowledge and skills needed to conceive, develop and deploy Internet-based e-commerce sites are inherently multidisciplinary in nature. Creating such applications requires a knowledge of Internet protocols, interface design, database management, programming languages, electronic commerce marketing and management strategies, and many more areas.

The Master of Internet Technology Program is administered by faculty from the Department of Management Information Systems in the Terry College of Business, the Department of Computer Science in the Franklin College of Arts and Sciences and the New Media Institute. Students are required to complete 32 semester hours of course work with 14 hours of required courses in two constituent areas - Computer Science and MIS plus a 3 hour course in Internet design and production in the New Media Institute. Nine hours of electives can be taken from a variety of departments on campus to provide depth in a particular area or breadth in several areas. Possible departments where electives could be taken include Marketing, Finance, Insurance, Real Estate, Accounting, Management and MIS in the Terry College of Business and Instructional Technology, Geography, Biology (bioinformatics), Computer Science, Artificial Intelligence, Housing and Consumer Economics and Telecommunications in other schools and colleges at UGA. The remaining six semester hours involve a project in which students work in teams to develop an Internet-based solution for a client. Projects are done for actual businesses and organizations to solve an existing problem or to utilize the Internet to expand business opportunities. More details on the program can be found at the website http://ebiz.terry.uga.edu/mit.

Master of Landscape Architecture (MLA)

The MLA program is professionally accredited and is designed to prepare students for professional practice at an advanced level. Applicants are accepted with previous degrees in the liberal arts and all specialized disciplines.

Program lengths are determined with consideration for academic backgrounds and related experience. Candidates not holding a bachelor's degree in landscape architecture enter the three-year program; their program requires 78 graduate semester credits. Students with the BLA degree complete two years of study; their program requires 52 credits. Practicing landscape architects with over 10 years responsible experience may be considered for an accelerated one-year program that emphasizes specialization.

All students complete a thesis that addresses a contemporary need in a specific topic area.

The "MLA Catalog, Information for Applicants," describes curriculum, courses, faculty, admission procedures, and allied programs in detail. A copy is available from the School of Environmental Design, Graduate Studies Office, (706) 542-4720.

Master of Laws (LLM)

The Master of Laws program combines intensive supervised work in a particular area of law with the taking of courses in related fields.

A minimum of two semesters of resident study is required, with a total of 27 semester hours of credit. In addition to the Graduate Seminar (2-hour required course in the Fall semester and 2-hour required course in the Spring semester) at least 12 hours of credit must be earned in courses at the Law School, and 7 hours of credit must be devoted to thesis preparation. The remaining 4 hours of credit may be earned either in course work at the Law School or other Faculty of the University, if appropriate to the student's plan of study, or in further thesis research. The student must maintain a cumulative average of 2.3 or C+, or above, in accordance with the Law School's grading system, for all graded course work, and must prepare a thesis of publishable quality and form that deals with a legal topic approved by the Graduate Legal Studies Committee. The thesis grade must be B or 3.0 or above to satisfy the requirements for the LLM degree. The thesis will be prepared under the guidance of a Law School faculty member, who will act as the major professor, and who will determine the grade on the thesis. The thesis must be approved as to form and substance by the major professor and a second reader designated by the Director of Graduate Legal Studies. The second reader will be a faculty member of this or another university or otherwise a legal expert in the subject area of the thesis. Together, the major professor and the second reader shall constitute the reading committee for the thesis.

American law students who wish to pursue the Master of Laws degree must hold an AB degree or equivalent from an approved college and a JD degree or equivalent from a law school which is a member of the Association of American Law Schools, which is approved by the American Bar Association, or is a state-accredited law school.

Students from other countries who wish to apply for the LLM must hold a degree equivalent to the JD from a recognized law school with an academic record and study program acceptable to the Faculty of the Law School. Further, applicants from non-English speaking countries must possess proficiency in English as demonstrated on the Test of English as a Foreign Language (TOEFL).

Each student's record of legal studies must display high scholarly aptitude, and the data required in the LLM application form must reflect a well-conceived plan of specialized study and research.

For additional information and applications, please write Graduate Legal Studies, School of Law, The University of Georgia, Athens, Georgia 30602-6012.

Master of Marketing Research (MMR)

This degree program is designed to develop marketing research professionals with a solid understanding of business and marketing decision-making. The program, which begins each June, includes 39 semester hours of graduate work including two semesters (summer and fall) of internship. Students without prior business courses must complete foundation courses before entering the program. No thesis is required. A Board of Advisors composed of the nation's leading marketing researchers works closely with faculty on program evaluation, instruction, and funding. Marketing Research Assistantships provide a stipend of $5,000 for each student. Admission is very selective.

Master of Mass Communication (MMC)

The Master of Mass Communication degree serves those students whose career goals indicate that additional course work will be more advantageous to them than the completion of the traditional thesis that is required for the Master of Arts degree. The additional course work provides an opportunity for more breadth and depth of exposure to areas which lay the foundations of career development whether in additional mass communication courses or in cognate courses that tie into the candidate's goals. A total of 33 semester hours of graduate course work is required to complete the program.

Master of Music (MM)

This degree offers major concentrations in performance, piano pedagogy, chamber music/ accompanying, conducting, woodwinds, composition, and music literature. Each concentration requires an approved program with a minimum number of hours ranging from 30 to 36 semester hours depending on the concentration elected. Each program of study includes a final project that is satisfied by a recital, a large original composition, or an approved research project.

Master of Music Education (MMEd)

This degree offers a concentration in music education or music therapy. Completion of the program leads to the MMEd degree and Georgia teacher certification in music at the T-5 level. Those who complete the degree program with a concentration in music therapy and complete a six-month internship in music therapy are also academically qualified to become registered music therapists.

This degree may be obtained through either of two plans. Under either plan, A or B, an oral and/or written comprehensive examination must be passed during the final semester of work.

PLAN A

The requirements for this degree may be met by completion of an approved program of study of 30 graduate hours in music, education, and music education, plus three semester hours in applied problems in music. This program must include at least 24 semester hours outside the field of education. A research course and other courses required by the department must be included in the student's program.

PLAN B

Under this option, the requirements may be met by completion of an approved program of 36 semester hours of graduate course work. These courses must include 30 semester hours outside the field of education. A research course and other courses required by the department must be included in the program.

Master of Plant Protection and Pest Management (MPPPM)

The Master of Plant Protection and Pest Management program is designed to prepare graduates with comprehensive, multi-disciplinary training in plant pathology, entomology, and weed science for employment by industrial, extension, or regulatory agencies.

Applicants for the Master of Plant Protection and Pest Management program must hold the baccalaureate degree from an accredited college or university. Basic admission requirements are essentially the same as those required for admission to Master of Science programs in each of the three university departments cooperating to offer the program. Final decisions on admittance are made by the MPPPM coordinating committee. Students who satisfy all basic admission requirements, but whose background in pertinent biological and agricultural sciences is inadequate, must enroll for selected undergraduate courses as a means of removing deficiencies. Inquiries concerning specific admission requirements and procedures should be addressed to:

Coordinator of MPPPM Program, Department of Entomology, Biological Sciences Building, The University of Georgia, Athens, Georgia 30602-2603.

A total of 33 semester hours of graduate course work is required to complete the program. Students will normally complete one internship. The internship is designed to provide practical work experience in pest management, such as with an agricultural consultant, chemical company, or the Cooperative Extension Service. There is no thesis or language requirement. Each candidate for the degree must pass a final written and oral examination.

Master of Public Administration (MPA)

The purpose of the MPA degree is to educate students for administrative and managerial careers in the federal, state, and local levels of government. The prerequisites for the program include a baccalaureate degree, an undergraduate course in American government, and a course which includes work in accounting, computer science, or statistics. The program requires a minimum of 41 semester hours of course work. Twenty hours are required core courses or socialization courses while the remainder are devoted to elective specialties. An internship, full-time for three months or part-time for six months, is required for students not having administrative experience. It usually is served in a state, local, or federal government agency. Finally, the student must pass a comprehensive written examination in four fields of public administration.

Master of Social Work (MSW)

A program of the School of Social Work, this graduate professional degree typically requires four semesters of full-time study. Applicants from accredited BSW programs may receive advanced standing and earn the MSW degree in three semesters. Students who transfer from accredited graduate social work programs are required to take a minimum of 40 semester hours of study.

Academic work is divided between classroom and field instruction. Selected classes and field instruction are held in off-campus locations. Research is emphasized through evaluation of practice and an optional thesis.

In addition to meeting the general requirements of the Graduate School, applicants to the School of Social Work must have completed thirty semester or eighteen semester credit hours in the behavioral and social sciences that include content on the following: social, psychological, and biological determinants of human behavior; diverse cultures; social conditions; and social problems. The Master of Social Work program is fully accredited by the Council on Social Work Education.

Specialist in Education (EdS)

The Specialist in Education degree is a self-contained degree program intermediate between the master's degree and the doctor's degree both in time and depth. It provides advanced study for those preparing for positions which call for a higher level of competence and specialization than that of the master's degree but without the heavy emphasis on research of the doctor's degree.

The degree is offered in the following fields: adult education, art education, communication sciences and disorders, early childhood education, educational leadership, educational psychology, English education, guidance and counseling, instructional technology, mathematics education, middle school education, music education, occupational studies, physical education and sport studies, reading education, school psychology, science education, social science education, special education, and teaching additional languages.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Specialist in Education degree upon recommendation of the appropriate department/ division in the College of Education and approval of the dean of the Graduate School. To be admitted to this degree program, an applicant must hold a master's degree from a regionally accredited institution.

2. *Time Limit.* All requirements for the Specialist in Education degree must be completed within six years, beginning with the first registration for courses on the student's program of

study. An extension of time may be granted only on conditions beyond the control of the student.

3. *Program of Study.* A program of study should be prepared by the student and the major professor during the first semester in residence. The program for the degree shall consist of a minimum of 30 semester hours of study at the graduate level beyond the master's degree. The program shall be planned as a logically organized whole, in light of the student's record in previous undergraduate and graduate courses, performance on standardized and non-standardized examinations, and the entire professional experience. The program of study, approved by the major professor and the graduate coordinator, is submitted to the Graduate School by Friday of the second full week of classes of the semester in which degree requirements are completed. If degree requirements are completed during summer term, the program of study is due by Friday of the first full week of classes. A maximum of 15 hours of non-resident in-service credit is allowed on the program of study.

4. *Language Requirement.* All candidates for graduate degrees are required to show correctness and good taste in their use of both written and spoken English.

5. *Accepting Credit by Transfer.* A student fully accepted into a Specialist in Education degree program at an accredited institution may transfer six semester hours of graduate course work provided that the courses to be transferred constitute a logical part of the student's program of study and are approved by the student's major professor, the graduate coordinator, and the dean of the Graduate School. Such transfer of credit cannot exceed six semester hours, cannot reduce the residence requirement to fewer than 15 hours, and must fall within the time limit of the degree. The courses to be transferred may not have been used as part of the requirements for another degree. No grade below B (3.0) may be transferred. Transfer grades are not used in calculating semester and cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the time the student plans to graduate.

6. *In-Service Credit.* A maximum of 15 semester hours of graduate in-service credit taken at non-resident centers may be included in a program of study for the degree. This maximum will be reduced by any credit transferred from another institution.

7. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study.

8. *Final Examination.* The candidate must pass a written and/or oral comprehensive examination administered by the department. The results of the examination must be reported to the Graduate School.

9. *Registration Requirement.* A student must be registered at the University of Georgia for a minimum of three hours of credit the semester in which all degree requirements are completed.

10. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation.

Doctor of Education (EdD)

This degree provides advanced professional training for careers in teaching, administration, and other educational services. The degree is offered in the following fields of education: adult education, art education, education of gifted, educational leadership, educational psychology, exercise science, higher education, instructional technology, mathematics education, music education, occupational studies, physical education and sport studies, reading education, science education, social science education, and special education. Specialization in research training and in subject fields appropriate to elementary, secondary, and college teaching is provided.

Departments that have been approved to offer the Doctor of Education degree may implement this degree program by the adoption of appropriate rules and regulations. Departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

Requirements

1. *Admission.* An applicant who desires to pursue advanced professional training in education beyond the master's degree, with a view to becoming a candidate for the Doctor of Educa-

tion degree, will be expected to file formal application and present himself to the faculty of the appropriate department/division in the College of Education for special tests and interviews. Recommendation on admission will be made by the department only after its screening procedures have been carried out. Admission will be upon the recommendation of the graduate coordinator, or an authorized representative, and approval of the dean of the Graduate School.

2. *Residence.* The degree presupposes a minimum of three full years of study beyond the bachelor's degree and cannot be secured through summer work alone. At least two consecutive semesters (i.e., enrollment for a minimum of 20 hours of consecutive course work included on the program of study) must be spent in full-time resident study on the campus of the University of Georgia, one of which may be a summer semester. Undergraduate courses taken either to fulfill research skills requirements or to remove deficiencies may not be calculated in the 20 consecutive hours of resident credit.

3. *Time Limit.* All requirements for the degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement dates from the first registration for graduate courses on a student's program of study.

A candidate for the doctoral degree who fails to complete all degree requirements within five years after passing the comprehensive examination, and being admitted to candidacy, will be required to take the comprehensive examinations again and be admitted to candidacy a second time.

4. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study.

5. *Advisory Committee.* Before the end of the first year of residence of a prospective candidate for the Doctor of Education degree and upon the recommendation of the departmental graduate coordinator, the dean of the Graduate School shall appoint an advisory committee for the student. The committee must consist of a minimum of three graduate faculty members. Provisional graduate faculty may serve in the same capacity as regular graduate faculty but **cannot** serve as chair or co-chair of the committee. Additional voting members may be appointed to the committee as approved by departmental policies, including no more than one non-UGA faculty, who must hold the terminal degree in their field of study. If there are more than three members, there must be greater than 50% graduate faculty representation. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student's defense of his/her research. The committee should advise the student of required research skills and other requirements.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of the department.

6. *Programs of Study.* A preliminary program of study based on a minimum of 80 semester hours of course work beyond the baccalaureate degree, excluding dissertation credit, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study must be developed by the major professor and the doctoral student and approved by the advisory committee with no more than one dissenting vote. The program of study should constitute a logical whole and be significantly related to the student's vocational objectives. A minimum of 30 credit hours of course work, exclusive of dissertation credit, must be taken at the University of Georgia at the doctoral level; i.e., 40 total credit hours must be taken at the University of Georgia. A minimum of three hours of 9300, doctoral dissertation, must be included on the program of study. The program of study should consist of 16 or more hours of 8000- and 9000-level courses in addition to research and dissertation writing.

A final typed program of study will be submitted to the Graduate School prior to notification of the comprehensive examination. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study should show all graduate courses relevant to the doctoral program and not just courses satisfying the minimum degree requirement. Courses from the master's degree and courses taken at other institutions should be listed in the "Relevant Master's and Other Graduate Degree Courses" section of the program of study form. The program of study must carry a minimum of 33 hours of course work, three hours of which must be dissertation writing (9300).

The department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of each year of study in order to advise the student whether or not to continue in the program.

7. *Acceptance of Credit by Transfer.* If graduate credit earned at an accredited institution constitutes a logical part of the student's program, transfer of credit may be allowed when recommended by the student's major professor, advisory committee, graduate coordinator, and when approved by the dean of the Graduate School. Such transfer of credit cannot exceed nine semester hours and must fall within the time limit of the degree. No grade below B may be transferred. The courses to be transferred may not have been used in a degree program at another institution. Transfer grades are not used in calculating cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the time the student plans to graduate. **No courses taken prior to the student's admission to their degree program at The University of Georgia are eligible for transfer.**

8. *Comprehensive Examinations.* A student must pass formal, comprehensive written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's advisory committee.

The written comprehensive examination, although administered by the advisory committee, may be prepared and graded according to the procedures and policies in effect in the student's department. The oral comprehensive examination will be an inclusive examination within the student's field of study. An examination of the student's dissertation prospectus (proposal) may precede or follow the oral comprehensive examination but may not take the place of the oral comprehensive examination. All members of the student's advisory committee must be present simultaneously for the oral examination and prospectus (proposal) presentation.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of the examination at least two weeks before the date of the examination.

Following each examination, written and oral, each member of the advisory committee will cast a written vote of pass or fail on the examination. To pass each examination the agreement of the advisory committee is achieved with no more than one dissenting vote. An abstention is not an appropriate vote for the comprehensive examination. The results of both examinations will be reported to the Graduate School within two weeks following the oral examination.

9. *Dissertation Planning.* The dissertation, being the most important single requirement for the Doctor of Education degree, should demonstrate the intelligent application of appropriate research procedures to the investigation of a problem in educational theory or practice. The dissertation problem must be conducted on some subject related to the student's major field of study and demonstrate evidence of scholarly ability and a thorough evaluation of relevant source materials. The conclusions must be logical, the literary form acceptable, and the contribution to education theory or practice substantial.

Persons who serve on the advisory committee at the time the dissertation research is undertaken must be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation. The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student. This formal consideration may not take the place of the comprehensive oral examination.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of the advisory committee with no more than one dissenting vote as evidenced by their signing an appropriate form, which, together with the approved prospectus, is filed with the graduate coordinator.

10. *Admission to Candidacy.* The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School at least two full semesters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

(1) all prerequisites set as a condition to admission have been satisfactorily completed;
(2) research skills requirements, if applicable, have been met;
(3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
(4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the final program of study);
(5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
(6) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointments;
(7) a dissertation prospectus has been approved; and
(8) the residence requirement has been met.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

After admission to candidacy, a student must register for at least two additional semesters and a total minimum of 10 hours of dissertation or other appropriate graduate credit. A student must register for a minimum of three hours of credit in any semester when using University facilities, and/or faculty or staff time.

Once a student has been admitted to candidacy, the department has an ethical responsibility to ensure that appropriate faculty mentorship is provided to the candidate for completion of the degree.

11. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation, he or she will certify that it has his or her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee and schedule a final oral defense. The graduate coordinator must notify the Graduate School at least two weeks prior to the defense. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members must have three weeks to read and evaluate the completed dissertation.

Written assent of the committee members (other than the major professor) will be required before a dissertation will be approved as ready for a final defense. No more than one dissenting vote may be allowed for the approval of the dissertation. If the advisory committee declines to approve the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation will be chaired by the student's major professor and attended by all members of the advisory committee simultaneously. It is open to all members of the University community. The student's dissertation and defense must be approved by members of the advisory committee with no more than one dissenting vote and who must certify their approval in writing. An abstention is not an appropriate vote for the final defense. The results of the defense of the dissertation must be reported to the Graduate School at least two weeks prior to graduation for the current semester.

Once the dissertation has been approved by the advisory committee and the final oral examination has been passed, the dissertation must be submitted to the Graduate School for final approval no later than two weeks prior to graduation of the following semester. Dissertations which are not submitted by this deadline must be defended again and approved by the Advisory Committee before they will be considered by the Graduate School for final approval.

12. *Submitting the Dissertation.* One complete formatted copy of the dissertation must be electronically submitted to the Graduate School for a format check no later than four weeks prior to graduation.

The Graduate School must receive the Final Defense Approval form and an electronic submission of the corrected dissertation no later than two weeks prior to graduation. This official copy of the dissertation will be electronically submitted by the Graduate School to the main library for archiving.

A graduate student may not submit a dissertation to the Graduate School for format checking or the dean's approval between the last day of classes and late registration of the following term.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must enroll for a minimum of three hours of credit the semester in which graduation requirements are completed unless additional stipulations are required by other units of the university.

Cooperative Doctoral Programs

The University cooperates with State University of West Georgia to offer the Doctor of Education degree in educational leadership. The University also cooperates with Fort Valley State University to offer the Doctor of Education degree in the following areas: adult education and educational leadership. For information concerning this program, please contact the Office of Graduate Admissions, The University of Georgia, Athens, Georgia 30602-7402.

Doctor of Musical Arts (DMA)

The program of study leading to the Doctor of Musical Arts degree provides advanced professional, academic, and research preparation for music careers in teaching, performing, composing, and conducting. Major concentrations are offered in music education, performance, composition, and choral conducting. The School of Music should be contacted regarding applied music options available within the performance area.

Requirements

1. *Admission.* In addition to meeting the general requirements for graduate admission to the University, an applicant must present evidence of potential for significant scholarly, artistic, and professional attainment in his or her intended major area of concentration. Such potential is normally documented through an assessment of the applicant's academic and professional background and standing; an audition; a portfolio review of musical compositions and performances; letters of recommendation; an interview; and other standard admission review procedures as appropriate to the intended major field of concentration. A recommendation for admission to the program from the School of Music must be approved by the dean of the Graduate School.

2. *Diagnostic Examinations.* Diagnostic examinations are administered prior to or during the initial term of enrollment. Information concerning the diagnostic examinations is available from the Office of Graduate Studies, School of Music.

3. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least two consecutive semesters of full-time work (i.e., enrollment for a minimum of 20 hours of consecutive course work included on the program of study) must be spent in resident study on the campus of the University of Georgia. Undergraduate courses taken either to fulfill research skills requirements or to remove deficiencies may not be calculated in the 20 consecutive hours of resident credit.

4. *Time Limit.* All requirements for the degree except the dissertation or document and final oral examination must be completed within a pe-

riod of six years. This time requirement dates from the first registration for graduate courses on a student's program of study.

A candidate for the doctoral degree who fails to complete all degree requirements within five years after passing the comprehensive examination, and being admitted to candidacy, will be required to take the comprehensive examinations again and be admitted to candidacy a second time.

5. *Research Skills Requirements.* The program of study requires research competencies appropriate to the elected major and minor fields of concentration. Research skills requirements will vary but may include such areas as statistics, computer science, music bibliography, diction, and foreign languages.

A student electing voice performance as the major field of concentration is required to demonstrate a reading knowledge of two foreign languages selected from Italian, German, or French. A student electing a major in either voice performance or choral conducting must demonstrate competence in German, French, and Italian diction and pronunciation. For any other student, research skills are specified by the advisory committee as appropriate to the major or secondary field of concentration. Undergraduate course credit earned in the completion of language or other research skills requirements is not applicable to the minimum number of hours necessary for the awarding of the degree. Information concerning methods of satisfying research skills requirements may be obtained from the Office of Graduate Studies, School of Music.

6. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study.

7. *Advisory Committee.* The graduate coordinator of the School of Music recommends an advisory committee to be appointed by the dean of the Graduate School during the student's first year of enrollment. Included among the advisory committee are three faculty members representing the minor field of concentration and the areas of music history/literature and music theory. Provisional graduate faculty may serve in the same capacity as regular graduate faculty but **cannot** serve as chair or co-chair of the committee. Additional voting members may be appointed to the committee as approved by departmental policies, including no more than one non-UGA faculty, who must hold the terminal degree in their field of study. If there are more than three members, there must be greater than 50% graduate faculty representation.

The advisory committee, in consultation with the student, is charged with planning the student's program of study, specifying research skills requirements, arranging for and administering the comprehensive examinations, approving the topic for the document or dissertation, approving and evaluating recital requirements, and approving the student's defense of his or her research.

Recommendations for advisory committee membership, and replacements should vacancies occur, must meet with the approval of the Graduate Studies Committee and the School of Music and the dean of the Graduate School.

8. *Programs of Study.* The program of study involves the completion of course work in five areas: major field; minor field; music history/literature and theory; music in higher education; and research/special requirements. A preliminary program of study is normally developed during the first year of residence. The program must be approved by a majority of the advisory committee. The program of study should consist of 16 or more hours of 8000- and 9000-level courses in addition to research and dissertation writing.

A final typed program of study will be submitted to the Graduate School prior to notification of the comprehensive examination. The program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program including courses from the master's degree, courses taken at other universities, and those courses taken in residence stipulated as satisfying minimum degree requirements within the stated matriculation areas. The program of study must carry a minimum of 30 hours of course work, three hours of which must be dissertation writing (9300).

The department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of the first year of study in order to advise the student whether or not to continue in the program.

9. *Acceptance of Credit by Transfer.* If graduate credit earned at an accredited institution constitutes a logical part of the student's program, transfer of credit may be allowed when recommended by the student's major professor, advisory committee, graduate coordinator, and when approved by the dean of the Graduate School. Such transfer of credit cannot exceed nine semester hours and must fall within the time limit of the degree. No grade below B may be transferred. The courses to be transferred may not have been used in a degree program at another institution. Transfer grades are not used in calculating cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the time the student plans to graduate. **No courses taken prior to the student's admission to their degree program at The University of Georgia are eligible for transfer.**

10. *Comprehensive Examinations.* The comprehensive examinations are designed to evaluate the student's ability to assimilate and integrate knowledge, apply historical and theoretical concepts, demonstrate skills, and draw conclusions. The examinations, consisting of written and oral segments, may include a practicum, and are normally scheduled at or near the completion of course work. They cover doctoral course work completed in meeting the requirements of each cognate area of study for the degree, graduate work completed at the master's level, and general musical knowledge acquired through independent study, research, and professional experience. The advisory committee prepares, administers, and evaluates the comprehensive examinations. The graduate coordinator reports the outcome to the dean of the Graduate School. To pass each examination, the agreement of the advisory committee is achieved with no more than one dissenting vote. An abstention is not an appropriate vote for the comprehensive examination. Successful completion of the written examination is a prerequisite for scheduling the oral comprehensive examination. All members of the student's advisory committee must be present simultaneously for the oral examination and prospectus (proposal) presentation. The results of both examinations will be reported to the Graduate School within two weeks following the oral examination.

An examination of the student's dissertation prospectus may follow the oral comprehensive examination or be scheduled at a later date. The examination of the dissertation prospectus may not take the place of the oral comprehensive examination.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator notifies the Graduate School of the time and place of the oral examination at least two weeks prior to its administration.

11. *Dissertation/Document.* A candidate electing music education as the major field of concentration must present a dissertation representing originality of research, independent thinking, scholarly ability, and technical mastery of the chosen topic of study. A candidate of performance, choral conducting, or composition is required to present a written document which, in conjunction with required recitals, is submitted in fulfillment of dissertation requirements. The document is more limited in scope than the dissertation, though comparable in scholarship and its contribution to existing knowledge in the field.

The dissertation or document must demonstrate originality and scholarship; the conclusions must be quantified; the literary form must be consistent with normal standards for scholarly writing; and the contribution to knowledge must merit publication. A candidate whose major field of concentration is composition or conducting may elect a dissertation with the consent of the advisory committee. When composition is the major field, the dissertation or document normally will include one or more major original musical works. Scores as well as an accompanying analytical essay are required.

12. *Dissertation/Document Planning.* The student is responsible for the development of a prospectus for the dissertation or document. The prospectus is developed with guidance provided by the major professor or designated chairman

of the advisory committee. The advisory committee is to be consulted on a regular basis during the period of prospectus development. Approval of the prospectus requires the agreement of the advisory committee as evidenced by their signing an approval sheet attached to the final draft of the prospectus. This action signifies that members of the advisory committee believe that the prospectus proposes a satisfactory research study. A copy of the approved prospectus is filed with the graduate coordinator.

13. *Recitals*. A minimum of three public recitals is required for a student whose major concentration is performance. A student with a concentration in composition is required to present two public recitals. Four recital performances are required of a student majoring with a concentration in choral conducting and literature. Programs for all recitals and performances must be approved two months in advance by the major professor and advisory committee. When a lecture-recital is to be given, an outline of the lecture must accompany the program proposal.

The first full recital must be presented prior to scheduling the written comprehensive examination; the last recital may not be scheduled until the oral comprehensive examination has been satisfactorily completed and degree candidacy established.

Recital projects presented in partial fulfillment of degree requirements will be evaluated by the full membership of the advisory committee. The committee will notify the major professor if the recital presentation is approved. Should the committee decline approval, the major professor and the dean of the Graduate School are so notified. The graduate coordinator of the School of Music, or an approved designate, will be responsible for coordinating the evaluation of recital project presentations.

14. *Admission to Candidacy.* The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School at least two full semesters before the date of graduation. This application is a certification by the School of Music that the student has demonstrated ability to do acceptable graduate work in the major concentration and that:

(1) all prerequisites set as a condition to admission have been satisfactorily completed;
(2) research skills requirements have been met;
(3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
(4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the program of study);
(5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
(6) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointment;
(7) a dissertation prospectus has been approved (if required for candidacy); and
(8) the residence requirement has been met.

After admission to candidacy, a student must register at least two additional semesters and a total minimum of 10 hours of dissertation or other appropriate graduate credit. The student must register for a minimum of three hours of credit in any semester when using University facilities, and/or faculty or staff time.

Once a student has been admitted to candidacy, the department has an ethical responsibility to ensure that appropriate faculty mentorship is provided to the candidate for completion of the degree.

15. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation, he or she will certify that it has his or her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee and schedule a final oral defense. The graduate coordinator must notify the Graduate School at least two weeks prior to the defense. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members must have three weeks to read and evaluate the completed dissertation.

Written assent of the committee members

(other than the major professor) will be required before a dissertation will be approved as ready for a final defense. No more than one dissenting vote may be allowed for the approval of the dissertation. If the advisory committee declines to approve the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation or document will be chaired by the student's major professor and attended by all members of the advisory committee simultaneously. It is open to all members of the University community. The advisory committee must approve the student's dissertation or document and defense with no more than one dissenting vote and must certify their approval in writing. An abstention is not an appropriate vote for the final defense. The results of the defense of the dissertation or document must be reported to the Graduate School at least two weeks prior to graduation for the current semester.

Once the dissertation has been approved by the advisory committee and the final oral examination has been passed, the dissertation must be submitted to the Graduate School for final approval no later than two weeks prior to graduation of the following semester. Dissertations which are not submitted by this deadline must be defended again and approved by the advisory committee before they will be considered by the Graduate School for final approval.

16. *Submitting the Dissertation.* One complete formatted copy of the dissertation must be electronically submitted to the Graduate School for a format check no later than four weeks prior to graduation.

The Graduate School must receive the Final Defense Approval form and an electronic submission of the corrected dissertation no later than two weeks prior to graduation. This official copy of the dissertation will be electronically submitted by the Graduate School to the main library for archiving.

A graduate student may not submit a dissertation to the Graduate School for format checking or the dean's approval between the last day of classes and late registration of the following term.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must be registered for a minimum of three hours of credit the semester in which all degree requirements are completed unless additional stipulations are required by other units of the university.

Doctor of Public Administration (DPA)

The objective of the program is to provide doctoral-level training for several client groups. First, the program will prepare students to serve in executive or upper managerial levels in local, state, and federal jurisdictions. Second, the program will prepare students for a variety of institutional settings that have significant interfaces with public agencies. These include various institutes, private planning agencies, and consulting organizations. Third, the program will help prepare individuals for specialized research and teaching careers.

The department may implement this degree program by the adoption of appropriate rules and regulations. Departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Doctor of Public Administration degree upon certification by the major department that he or she is a person of proper attainment and promise. The department must certify that appropriate courses can be offered and required research adequately supported and directed. Admission must be approved by the dean of the Graduate School.

2. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least two consecutive semesters of full-time work (i.e., enrollment for a minimum of 20 hours of consecutive course work included on the program of study) must be spent in resident study on this campus. If the student holds an assistantship or has other part-time duties, the residence requirement will be increased to provide the equivalent of two consecutive semesters of full-time study. Undergraduate courses taken either to fulfill research

skills requirements or to remove deficiencies may not be calculated in the 20 consecutive hours of resident credit.

3. *Time Limit.* All requirements for the degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement dates from the first registration for graduate courses on a student's program of study.

A candidate for the doctoral degree who fails to complete all degree requirements within five years after passing the comprehensive examination, and being admitted to candidacy, will be required to take the comprehensive examinations again and be admitted to candidacy a second time.

4. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study.

5. *Advisory Committee.* Before the end of the first year of residence of a prospective candidate for the Doctor of Public Administration degree and upon the recommendation of the departmental graduate coordinator, the dean of the Graduate School shall appoint an advisory committee for the student. The committee will consist of a major professor, as chairman, and three additional members. The major professor and at least two of the other members of the committee must be appointed members of the graduate faculty. Provisional graduate faculty may serve in the same capacity as regular graduate faculty but **cannot** serve as chair or co-chair of the committee. Additional voting members may be appointed to the committee as approved by departmental policies, including no more than one non-UGA faculty, who must hold the terminal degree in their field of study. If there are more than three members, there must be greater than 50% graduate faculty representation. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student's defense of his or her research. The committee should advise the student of required research skills and other requirements.

The department's recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of the department.

6. *Programs of Study.* A preliminary program of study, developed by the major professor and the doctoral student and approved by a majority of the advisory committee, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study should consist of 16 or more hours of 8000- and 9000-level courses in addition to research and dissertation writing.

A final typed program of study will be submitted to the Graduate School prior to notification of the comprehensive examination. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program and not just courses satisfying the minimum degree requirement. Courses from the masterís degree and courses taken at other universities should be listed in the "Relevant Master's or Other Graduate Degree Courses" section of the program of study form. The program of study must carry a minimum of 30 hours of course work, three hours of which must be dissertation writing (9300).

The department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of the first year of study in order to advise the student whether or not to continue in the program.

7. *Acceptance of Credit by Transfer.* If graduate credit earned at an accredited institution constitutes a logical part of the student's program, transfer of credit may be allowed when recommended by the student's major professor, advisory committee, graduate coordinator, and when approved by the dean of the Graduate School. Such transfer of credit cannot exceed nine semester hours and must fall within the time limit of the degree. No grade below B may be trans-

ferred. The courses to be transferred may not have been used in a degree program at another institution. Transfer grades are not used in calculating cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the time the student plans to graduate. **No courses taken prior to the student's admission to their degree program at The University of Georgia are eligible for transfer.**

8. *Comprehensive Examinations.* A student must pass formal, comprehensive written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's advisory committee.

The written comprehensive examination, although administered by the advisory committee, may be prepared and graded according to the procedures and policies in effect in the student's department. The oral comprehensive examination will be an inclusive examination within the student's field of study. An examination of the student's dissertation prospectus (proposal) may precede or follow the oral comprehensive examination but may not take the place of the oral comprehensive examination. All members of the student's advisory committee must be present simultaneously for the oral examination and prospectus (proposal) presentation.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of the examination at least two weeks before the date of the examination.

Following each examination, written and oral, each member of the advisory committee will cast a written vote of pass or fail on the examination. To pass each examination, the agreement of the advisory committee is achieved with no more than one dissenting vote. An abstention is not an appropriate vote for the comprehensive examination. The results of both examinations will be reported to the Graduate School within two weeks following the oral examination.

9. *Admission to Candidacy.* The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School at least two full semesters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

(1) all prerequisites set as a condition to admission have been satisfactorily completed;
(2) research skills requirements have been met;
(3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
(4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the final program of study);
(5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
(6) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointments;
(7) a dissertation prospectus has been approved (if required for candidacy); and
(8) the residence requirement has been met.

After admission to candidacy, a student must register for at least two additional semesters and a total minimum of 10 hours of dissertation or other appropriate graduate credit. A student must register for a minimum of three hours of credit in any semester when using University facilities, and/or faculty or staff time.

Once a student has been admitted to candidacy, the department has an ethical responsibility to ensure that appropriate faculty mentorship is provided to the candidate for completion of the degree.

10. *Dissertation Planning.* Students pursuing this degree must present a dissertation on some subject connected with his or her major field of study. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study. The conclusions must be logical, the literary form ac-

ceptable, and the contribution to knowledge meriting publication.

Persons who serve on the advisory committee at the time the dissertation research is undertaken must be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student. This formal consideration may not take the place of the comprehensive oral examination.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of the advisory committee with no more than one dissenting vote as evidenced by their signing an appropriate form, which, together with the approved prospectus, is filed with the graduate coordinator.

11. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation, he or she will certify that it has his or her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee and schedule a final oral defense. The graduate coordinator must notify the Graduate School at least two weeks prior to the defense. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members must have three weeks to read and evaluate the completed dissertation.

Written assent of the committee members (other than the major professor) will be required before a dissertation will be approved as ready for a final defense. No more than one dissenting vote may be allowed for the approval of the dissertation. If the advisory committee declines to approve the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation will be chaired by the student's major professor and attended by all members of the advisory committee. It is open to all members of the University community. The advisory committee must approve the student's dissertation and defense with no more than one dissenting vote and must certify their approval in writing. An abstention is not an appropriate vote for the final defense. The results of the defense of the dissertation must be reported to the Graduate School at least two weeks prior to graduation for the current semester.

Once the dissertation has been approved by the advisory committee and the final oral examination has been passed, the dissertation must be submitted to the Graduate School for final approval no later than two weeks prior to graduation of the following semester. Dissertations which are not submitted by this deadline must be defended again and approved by the advisory committee before they will be considered by the Graduate School for final approval.

12. *Submitting the Dissertation.* One complete formatted copy of the dissertation must be electronically submitted to the Graduate School for a format check no later than four weeks prior to graduation.

The Graduate School must receive the Final Defense Approval form and an electronic submission of the corrected dissertation no later than two weeks prior to graduation. This official copy of the dissertation will be electronically submitted by the Graduate School to the main library for archiving.

A graduate student may not submit a dissertation to the Graduate School for format checking or the dean's approval between the last day of classes and late registration of the following term.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must enroll for a minimum of three hours of credit the semester in which graduation requirements are completed unless additional stipulations are required by other units of the university.

Certification of Professional Personnel

The University of Georgia offers graduate programs leading to professional personnel certification at the master's, specialist, and doctoral levels in some 40 different teaching, administrative, supervisory, and school service fields.

The degrees Master of Education and Master of Arts (Education) include both teaching and professional courses for fifth-year certification. Students who complete a Master of Arts degree may meet certification requirements by taking professional courses in education.

A 48 semester-hour program leading to Level 5 certification is available for students holding a baccalaureate degree which meets the teaching field requirements at the Level 4 level in art education, social science education, science education, and language education. The program allows two options, one leading to Level 4 certification upon completion of Phase I courses and subsequently to Level 5 certification, and the other leading directly to Level 5 certification upon completion of the entire program.

Specific course requirements for graduate certification may be obtained by contacting the appropriate department within the College of Education. In addition to completing prescribed academic work, individuals applying for initial teacher certification must present passing scores on Praxis I academic skills test in reading, mathematics, and writing. Individuals are exempt from this requirement if they have earned qualifying scores on any of these tests: SAT total score 1000 (with at least 480V and 520M); GRE total score 1030 (with at least 490V and 540Q); or ACT total score 22 (with at least 21V and 22M). An applicant must also earn satisfactory scores on the Praxis D (Subject Assessment) in the appropriate subject areas before an application can be submitted. Applications for evaluation, professional certificates, and Praxis I and H registration packets and study guides are available from the Associate Dean's Office, G-10 Aderhold Hall. For further information on certification programs, please contact the appropriate department in the College of Education.

Certificate Programs

Atmospheric Sciences

The University of Georgia offers a graduate Certificate in Atmospheric Sciences. The purpose of the program is to produce graduate scholars in the atmospheric sciences. Students in the agricultural, biological, earth, engineering, mathematical, or physical sciences may find this program of interest.

The program gives graduate students the opportunity for in-depth study and research in the atmospheric sciences. Additionally, the program allows graduate students to document their educational achievement and experiences in the atmospheric sciences beyond their graduate major.

Any graduate student pursuing a MS or PhD degree with a major housed in the College of Agricultural and Environmental Sciences, the College of Arts and Sciences, or the School of Forest Resources with the approval of their major professor may be admitted into the graduate Certificate in Atmospheric Sciences Program. The student should submit a formal graduate Certificate in Atmospheric Sciences application, copies of all relevant transcripts, and proposed course of study for the certificate and for their degree to the graduate atmospheric sciences director. See the atmospheric sciences web page for further application information.

The Certificate in Atmospheric Sciences Program is sponsored by the Departments of Biological and Agricultural Engineering, Crop and Soil Sciences, Environmental Health Science, Geography, Marine Sciences, Physics and Astronomy, Statistics, and the School of Forest Resources.

Program Requirements:

The minimum course requirement for the graduate Certificate in Atmospheric Sciences is 18 graduate semester hours in approved course work beyond the undergraduate atmospheric sciences core. The undergraduate core courses are Weather Analysis (GEOG 3120), Atmospheric Dynamics (GEOG/ENGR 4112), Introductory Atmospheric Physics (ENGR/GEOG 4131-4131L), Atmospheric Thermodynamics (ENGR/GEOG 4111-4111L), and a 3000/4000 level climatology course. Students must make-up any deficiency in their undergraduate preparation.

Undergraduate core courses, even if taken at the graduate level, cannot be used to meet the requirements for the graduate certificate.

The student's advisory committee must have one member of the atmospheric sciences faculty outside the student's major department. The advisory committee may require additional course work.

Course Work Requirement:

The graduate certificate in atmospheric sciences requires a minimum of 15 semester hours in atmospheric or related sciences from the approved list and three semester hours in advanced analytical methods.

The course work must be distributed as follows:

1. At least one course in climatology
2. No more than three (3) courses from the same home department may count toward the certificate
3. Courses from at least three home departments must be included
4. Combined undergraduate and graduate course work must ensure a strong foundation in the knowledge, skills, and techniques to allow the student to conduct independent research in the atmospheric sciences. The student's advisory committee or the graduate certificate academic committee may require additional course work.

Atmospheric or related sciences courses are listed by the following academic units: Biological and Agricultural Engineering (ENGR), Crop and Soil Sciences (CRSS), Environmental Health Science (EHSC), Forest Resources (FORS), Geography (GEOG), Marine Sciences (MARS), Physics and Astronomy (PHYS & ASTR), and Statistics (STAT). Contact the graduate coordinator for the current list of approved courses.

Additional Requirements:

In addition to the formal course work, the student's thesis or dissertation must have a major component related to the atmospheric sciences. Students are awarded the Graduate Certificate in Atmospheric Sciences upon completion of all certificate requirements and completion of their University of Georgia MS or PhD degree.

For more information about the program, contact Dr. David E. Stooksbury, Department of Biological and Agricultural Engineering, (706) 583-0156. E-mail: stooks@engr.uga.edu or see our website at http://www.uga.edu/atsc.

Conservation Ecology and Sustainable Development

The University of Georgia offers a certificate in conservation ecology and sustainable development through the Institute of Ecology. Students who earn this certificate will receive interdisciplinary preparation to handle the unique, multidisciplinary problems associated with working in the area of conservation and sustainable development. Students in the natural sciences will add a social science perspective to their understanding of the ecology of development, and students in the social sciences will learn ecological principles so that their decisions can be grounded in biological fact.

The graduate certificate program requires a student to complete at least 20 hours of credit. The program of study must include four core courses: ECOL 6080, Principles of Conservation and Sustainable Development I (4 hrs.); ECOL 6140, Principles of Conservation and Sustainable Development II (3 hrs.); a seminar elective in conservation and sustainable development (2-3 hrs.); and ECOL 8400, Perspectives on Conservation Ecology and Sustainable Development (1 hr., repeated two times). The remaining hours of credit (at least 10) will be made up by elective courses selected from a list of approved courses. One or more of these courses may jointly fulfill the requirements in the graduate degree program of their department or school. The graduate student and his/her advisor in the student's academic department plan the program of study to fulfill the requirements of the certificate program.

Any graduate student in a natural science or a social science degree program at the University of Georgia is eligible to apply for admission to the certificate program. Application to the program should be made by filling out an application form available from the Ecology Graduate Program Office (Room 140, Ecology Building). Applications may be received and acted upon at any time.

For more information about the program, contact the graduate coordinator in the Institute of

Ecology, Ecology Building, (706) 542-3404. E-mail: ecoginfo@uga.edu. Website: www.ecology.uga.edu.

Environmental Ethics

The University of Georgia has a Faculty of Environmental Ethics; a certificate program at the graduate level; and a variety of courses devoted partially or entirely to issues of values and the environment.

The Certificate in Environmental Ethics. This certificate is awarded to graduate students meeting the following requirements: The completion of at least 18 hours of graduate work, including at least 14 hours of graduate course work in approved courses along with an approved research paper in environmental ethics designated for at least three hours of graduate credit. All candidates are required to take the following courses: EETH/PHIL 6220, *Environmental Ethics*; EETH/ECOL 6200, *Ecological Concepts*; EETH/PHIL 6250, *Technology and Values* or EETH/JURI 7870, *Environmental Dispute Resolution*; and EETH 6000, *Environmental Ethics Seminar*, as a common core. In addition, all candidates are required to pass an oral exam.

Other courses may be chosen by the student, with the approval of the graduate coordinator, from a list provided, according to his or her individual interest and career objectives, with the provision that no more than nine hours of course work for credit toward the certificate may be applied from any one academic field. Work on the certificate may be undertaken by any graduate student at the university.

To be admitted to the certificate program, the student must be admitted to the University as a prospective candidate for a graduate degree, a professional degree, or as a nondegree candidate (see General Regulations of the Graduate School Bulletin), and then make application to the graduate coordinator of the Faculty of Environmental Ethics. The nondegree candidate status applies to the person who already holds a master's or doctor's degree from an accredited institution and who wishes to take graduate courses without becoming a candidate for a degree. All prospective recipients of the certificate should be admitted to a school or college of the University and be assigned an advisor. The student and his or her advisor can then plan the program of study that will be a part of the student's application for acceptance into the environmental ethics program. The current graduate coordinator of the Faculty of Environmental Ethics is Dr. Peter G. Hartel, Department of Crop and Soil Sciences, (706) 542-0898.

Geographic Information Science Certificate

The University of Georgia offers a Graduate Certificate in Geographic Information Science. The field of geographic information science has grown rapidly with the development of powerful and versatile computing environments since the early1980's. This field comprises all phases of processing spatially-referenced data, including data acquisition (remote sensing, global positioning systems), data analysis (vector- and raster-based representational media, photogrammetry, spatial statistics), data interpretation, and data display (cartography). Since employment opportunities for people trained in geographic information science have proliferated, the University of Georgia has developed this graduate certification program. The Geography Department offers courses and related training in fundamental topics of geographic information science with other departments and organizational units, such as Anthropology, the Institute of Ecology, School of Forestry, School of Environmental Design, and the College of Agriculture and Environmental Science, offering training in applications of geographic information science. The curriculum structure is drawn primarily from Geography courses which are heavily enrolled with students from other units at UGA. The requirements were developed by an interdisciplinary committee.

The Graduate Geographic Information Science Certificate Program is designed with three components: a set of prerequisite skills necessary to gain entry into the program, a set of courses required of all students enrolled in the program, and a set of elective courses that permit exploration of more advanced themes in geographic information science. The prerequisite training, considered to be essential background for the certificate program, includes competence in elementary calculus, computer science, statistics, photo interpretation, and cartography. The three required courses include introductory GIS, an advanced GIS class focused on analysis, and a graduate level seminar in GIS. Elective courses include cartography, engineering surveying with the Global Positioning System (GPS), photogrammetry, remote sensing, and advanced remote sensing with GIS applications, with a formal requirement of at least one 8000-level seminar. A final requirement is the development of individual research projects or internships in geographic information science. Together the required and elective courses in the certificate program total 17 semester credits. Students are awarded the Graduate Certificate in Geographic Information Science upon completion of all certificate requirements and completion of a University of Georgia graduate degree. The current graduate coordinator for the GIS certificate is Dr. E. Lynn Usery, Department of Geography, (706) 542-2345, usery@uga.edu.

Gerontology

The University of Georgia has a strong commitment to gerontology training. Graduate training in gerontology is directed through the Gerontology Center located in Candler Hall. A graduate certificate in gerontology is awarded by the Gerontology Center.

The Gerontology Center. The major purpose of the Gerontology Center is to coordinate and promote activities throughout the University relating to aging. The center's primary responsibilities are to coordinate graduate training and research and to promote faculty development in gerontology. There is a Faculty of Gerontology associated with the Gerontology Center from 21 departments in 10 colleges and schools on campus. Additionally, the center has a full-time director, Dr. Leonard W. Poon, and Assistant Directors Dr. Kevin C. Lomax and Dr. Everett Lee. The Faculty of Gerontology, chaired by Dr. Poon, oversees pre- and post-doctoral training, research and service in both basic and applied gerontological science. The center also serves as a liaison between the activities and resources of the University and federal, state, and local funding agencies and interest groups. The Gerontology Center coordinates the Georgia Gerontology Consortium which is composed of four programs: The Distance Learning Partnership in Gerontology, The Southern Regional Student Convention on Gerontology and Geriatrics, The Georgia Gerontology Consortium Seed Grant Program, and The Faculty Instruction, Research, and Outreach Development Program. The Center also regularly sponsors conferences and speakers on a broad range of topics at the national, regional, and local level.

Graduate Certificate in Gerontology. The Gerontology Center awards a Certificate in Gerontology to graduate students meeting certain requirements. Students complete a total of 18 semester hours of graduate level courses to meet the requirements of the Certificate Program. Twelve of these hours must be taken from four categories of required courses. Three hours must be fulfilled to meet a research/practicum requirement. The remaining three hours may be chosen from a list of approved electives.

Required Course: GRNT 6000 - *Seminar in Aging* (three hours). All students are required to complete GRNT 6000 - *Seminar in Aging*. This course should be completed at the beginning of the program of study. The purpose of the seminar is to provide students with an overview of gerontology. The various content included in this seminar course should be helpful in deciding what Certificate courses are most relevant to a student's individualized plan of study.

Other Required Courses: *The Psychology, Sociology, and Biology/Physiology of Aging* (a total of nine hours). All students are required to complete at least one course on the biology/physiology, sociology, and psychology of aging from a list of approved courses that can be provided by the Assistant Director of the Gerontology Center.

Research/Practicum. All students are required to complete three hours in a research or practicum experience. Students whose discipline is focused on research may submit a thesis or dissertation which they completed to fulfill master's or doctoral requirements within their academic department or they may complete an individual research project for not less than three hours of credit. The thesis, dissertation, or research project must focus on some aspect of aging, and the project must be approved in writing by the Gerontology Center's Director or Assistant Director prior to development of the project in order to qualify for the Certificate.

Students whose discipline has a practitioner's emphasis may complete an approved practicum in a gerontological setting for not less than three hours. The practicum experience must also be approved in writing by the Gerontology Center's Director or Assistant Director before beginning the practicum.

Work on the certificate may be undertaken by any graduate student at the university. Courses that may be applied toward the certificate are found in the following academic units: adult education; cellular biology; child and family development; exercise science; foods and nutrition; health promotion and behavior; housing and consumer economics; law; pharmacy; psychology; recreation and leisure studies; social work; and sociology.

To be admitted to the certificate program, the student must be admitted to a department of the university at the graduate level either as a prospective candidate for a graduate degree or as a nondegree candidate and then make application to the Assistant Director of the Gerontology Center. The nondegree candidate status applies to a person who meets requirements for admission to the Graduate School but who wishes to take graduate courses without becoming a candidate for a degree. The prospective recipient of the certificate should be admitted to a department of the university and be assigned an advisor. The student and his/her advisor can then plan the program of study that will be a part of the student's application for acceptance into the gerontology certificate program.

For further information concerning the Gerontology Center contact Dr. Leonard W. Poon (lpoon@geron.uga.edu), Chairman of the Faculty of Gerontology and Director of the Gerontology Center. For information about the certificate program or courses available for credit, contact Dr. Kevin C. Lomax (klomax@geron.uga.edu), Assistant Director of the Gerontology Center. Both individuals may be reached at the University of Georgia Gerontology Center, 108 Gerontology Building, 255 E. Hancock Avenue, Athens, GA 30602-1775; phone (706) 425-3219; FAX: (706) 425-3221.

Global Policy Studies

The University of Georgia has a Center for the Study of Global Issues (GLOBIS) which offers a certificate in global policy studies at the graduate level.

GLOBIS explores and develops interdisciplinary and interprofessional programs of instruction, research, and service on a wide range of global issues. It administers undergraduate and graduate certificate programs in global policy studies; sponsors instructional and research-oriented symposia, seminars, lectures, and publications; and serves as a focal point for those interested in foreign languages and international studies both inside and outside the university.

The certificate program in global policy studies is designed to provide students with an international perspective as well as specialized, technical knowledge and skills. Graduate students earn the certificate as a supplement to a regular degree program. The certificate program blends well with disciplines which have traditionally prepared individuals for international service, e.g., business, economics, foreign languages, history, law, and political science. It is also designed for individuals in fields which have not traditionally offered international curricula, such as accounting, agriculture, education, forestry, journalism, nutrition, and plant sciences.

Most new students enrolled in a degree or professional program will find that they can satisfy the certificate requirements with few, if any, additions to their regular program of study. Many departments offer courses which simultaneously meet both certificate and degree requirements. Students applying to the university who are interested in the certificate program should contact GLOBIS for assistance in processing their application.

The requirements for the certificate include 24 semester hours of course work, including a nine-hour core sequence, a nine-hour substantive specialty, a six-hour skill requirement, an internship, and a paper requirement. Certificate students must take a minimum of 18 semester hours of this course work in residence at the University of Georgia.

The core sequence consists of three courses: (1) a course with global scope in the discipline in which the individual plans to develop his or her substantive specialty; (2) a relevant course in a foreign area or region, such as Africa, Asia, Europe, Latin America, or the Middle East (students who are doing their substantive specialty in a foreign area or region should take this course in a cognate discipline instead); and (3) GPST 6000 or the equivalent. This course will cover the planning, implementation, and evaluation of policies designed to deal with global problems, especially development.

The substantive specialty is composed of three courses that constitute a coherent area of concentration relevant to global policy studies. Many of these substantive specialties are identified by discipline, issue, or region, such as economics, development, or African affairs.

The professional skill requirement refers to competence in a foreign language or other relevant research or policy skill. Six hours in a foreign language beyond the 2001 level at the University of Georgia or the equivalent as determined by standardized proficiency tests is required.

The internship requirement consists of practical work experience in a student's chosen area. This requirement may be satisfied by an actual internship course or an equivalent field experience. There is also a requirement for a substantial paper on a global subject. This paper may be a master's thesis, a doctoral dissertation, or a paper suitable for presentation at a professional meeting.

Finally, certificate students must have at least one of these courses in a second or cognate discipline in addition to the interdisciplinary course in global policy analysis.

For further information concerning the certificate program, write Dr. Markus M. L. Crepaz, Coordinator, The Center for the Study of Global Issues, The University of Georgia, 113 Franklin House, Athens, GA 30602-4240, or call (706) 542-2947, or e-mail mcrepaz@uga.edu.

Historic Preservation Studies

With the passage of the National Historic Preservation Act of 1966, Congress declared historic preservation a part of national policy and authorized various programs to assist in the identification and perpetuation of those cultural resources which represent our national patrimony. Over the past 30 years much progress has been made in the documentation and preservation of our heritage. This progress has stimulated increased interest in the cultural environment as well as a desire, among many, to achieve a greater understanding of which elements constitute our heritage and how they may be protected for future generations.

Objectives of the Program:

(1) To develop within students an awareness of the contributions which historic resources make to the quality of environments and to the quality of life available to the general populace.

(2) To foster an understanding of historic preservation needs, problems, and opportunities and the role which individual citizens can play in the protection and perpetuation of historic resources.

(3) To prepare students, as citizens within their respective communities, to serve as volunteer members of citizen preservation organizations and/ or government commissions and to provide informed leadership to these and any other community preservation efforts.

(4) To provide students an opportunity to study historic preservation as a part of their academic program or as a supplemental educational opportunity available to graduates.

Curriculum: The certificate program requires a student to complete 18 hours of credit. These must include the nine hours of certificate core requirements with the remaining nine hours to be selected from the historic preservation curriculum. Three hours of the certificate requirements may be satisfied by a preservation-related thesis in the student's academic department. The proposal for these theses must be jointly approved by the graduate coordinator, or major professor, of the student's degree program and the Director of Graduate Studies in Historic Preservation.

For additional information contact John C. Waters, Director of Graduate Studies in Historic Preservation, (706) 542-4706.

Interdisciplinary Qualitative Studies

The University offers a Graduate Certificate in Interdisciplinary Qualitative Studies designed to provide students with (1) a thorough knowledge of qualitative research methodologies across disciplines; (2) expertise in qualitative research design and implementation; and (3) preparation to teach introductory courses in qualitative research. The certificate program consists of fifteen semester hours of credit, including participation in at least one semester of a research seminar, and use of qualitative inquiry in a dissertation. Any doctoral student may apply. For information, contact Dr. Kathleen deMarrais, Department of Educational Psychology, (706) 542-4600 or see our website: http://www.coe.uga.edu/edpsych/qualinquiry.html.

Marriage and Family Therapy

The Pre-Professional Graduate Certificate Program in Marriage and Family Therapy is designed to provide an interdisciplinary program for graduate students interested in the applied field of marriage and family therapy. The certificate program involves three units of the University of Georgia: the College of Education, the College of Family and Consumer Sciences, and the School of Social Work. Completion of the requirements for the certificate program will provide a strong academic basis preparing the student to undertake further supervised clinical training in marriage and family therapy. The certificate program is not intended to provide all the training necessary to function as an independent professional nor to meet all the requirements for (a) state licensure as a marriage and family therapist or (b) clinical membership in the American Association for Marriage and Family Therapy. Graduate courses that may be used to fulfill requirements for the certificate program are offered in several units of the University of Georgia including the Department of Child and Family Development, the Department of Counseling and Human Development, and the School of Social Work.

Any graduate student in the previously mentioned or related programs at the University is eligible to apply for admission to the certificate program.

To be admitted to the Certificate Program in Marriage and Family Therapy, the student must be admitted to the department of the university at the graduate level and then make an application to the Coordinator of the Faculty of Marriage and Family Therapy Certificate Program. The graduate student and his/her advisor in the student's academic department plan the program of study to fulfill the requirements of the certificate program. With appropriate approval, courses in the certificate program may also apply to the degree program in the student's academic department. For master's degree students, the certificate will be awarded upon completion of the certificate requirements and completion of the master's degree program in which the student in enrolled. For students already holding a master's degree, the certificate will be awarded at the end of the semester in which the certificate requirements are satisfied.

For further information concerning the certificate program, contact the Coordinator, MFT Certificate Program, School of Social Work, University of Georgia, Athens, GA 30602-7016.

Women's Studies

The Women's Studies Program offers a 15-hour graduate certificate in women's studies. The certificate is available to those students who are pursuing a graduate degree in any of the university's schools or colleges or to those who already hold a graduate degree. The purpose of the certificate is to expose students to the rapidly expanding interdisciplinary scholarship on women which might otherwise be neglected in their traditional curricula.

All certificate candidates are required to take the two following courses: WMST 6010, *Introduction to Feminist Theories*, 3 hours, and WMST 7010, *Women and the Construction of Knowledge*, 3 hours (prerequisite: WMST 6010). A student who has done extensive undergraduate or graduate course work in feminist theory may waive WMST 6010, without credit, and substitute another approved course by petitioning the program. The nine remaining hours may be drawn from the WMST courses listed below, or from courses in other cooperating departments which have been approved by the program:

WMST 6120	Biology and Politics of Women's Reproduction. 3 hours.
WMST 6130	Border Women: Gender Identify and Post-Colonialism. 3 hours.
WMST 6250	Special Topics in Women's Studies. 3 hours.
WMST 7050	The Political Economy of Gender in Third World Societies. 3 hours.
WMST 7060	Black Women's Narratives. 3 hours.
WMST 7070	Feminist Ethnography. 3 hours.
WMST 7100	Lesbian and Gay Studies. 3 hours.
WMST 7950	Directed Research in Women's Studies. 1-3 hours.
WMST 8020	Seminar in Advanced Feminist Theory. 1-3 hours.

For a complete listing of certificate courses in women's studies and for an application to the certificate program, contact the Director or Assistant Director of Women's Studies, 1200 S. Lumpkin Street, Athens, GA 30602-33647, (706) 542-2846.

Course Listings

The College of Agricultural and Environmental Sciences

Gale A. Buchanan,
Dean (Conner Hall)

The research and academic programs in the College of Agricultural and Environmental Sciences focus on training students to meet the needs of agriculture and environmental protection on a regional, national, and international level. The departments within the College offer graduate degrees at the masters and doctorate levels in a variety of fields; additional professional degrees are offered by some departments. These graduate degree programs offer considerable flexibility to meet individual students' interests and backgrounds, so that students can prepare for careers in industry, government, or academia. General information regarding degree programs is available from the College of Agricultural and Environmental Sciences. Details about specific admission or program requirements and options should be discussed with the appropriate department or graduate coordinator listed in this Bulletin.

Agricultural and Applied Economics

Fred C. White, *Head*
James E. Epperson, *Graduate Coordinator*,
542-0766
(Conner Hall)

Graduate study is offered at both the masters and doctoral levels. The Master of Science (MS) in agricultural economics and the Master of Science (MS) in environmental economics degrees require 27 hours minimum of course work and three hours of thesis. A Master of Agricultural Economics (MAE) degree consists of a minimum of 36 hours of course work including a technical report in lieu of a formal thesis. The Doctor of Philosophy (PhD) degree consists of a minimum of 63 hours of course work beyond the bachelor's degree, satisfactory performance on written and oral examinations, and a formal dissertation.

Graduate instruction and research may be undertaken in the following areas of specialization: agricultural marketing and consumer demand, agricultural business management, production economics, natural resources and environmental economics, and international trade and development.

Graduate research is coordinated with the department's overall research program. Students may select a research topic related to the department's current research projects or an approved area of sponsored research. Exceptional computer facilities, software, and support are available for departmental research.

Financial assistance is available to graduate students on a competitive basis in the form of departmental research assistantships. Paid internships are also available from regional and national agribusiness firms.

AAEC 4210/6210. Production Economics: Theory with Applications. 3 hours.
Undergraduate prerequisite: AAEC 3580-3580L.
Fundamental economic principles in determining efficient adjustments in agricultural resource use consistent with economic growth, and changing technology and economic conditions.

AAEC(EHSC) 4250/6250. Environmental and Public Health Law. 3 hours.
Not open to students with credit in AAEC 4930/6930.
Basic legal principles and procedures as they relate to environmental regulations and public health. Coverage of common law, torts, nuisances, regulatory standards, and state and federal environmental laws. Delineation of significant constitutional and federal regulations that affect managerial decisions.

AAEC 4510/6510. Farm Appraisal. 3 hours.
Undergraduate prerequisite: AAEC 2580 or ECON 2106.

The models of appraisal to farm property, including factors influencing farm land and building values, such as land use, soils, crops, livestock, and buildings.

AAEC 4710/6710. Rural Economic Development and Growth. 3 hours.
Undergraduate prerequisite: AAEC 2580 or ECON 2106.
Inputs and outputs between agriculture and agricultural businesses; analysis of factors affecting development and economic growth in developing areas.

AAEC 4800/6800-4800L/6800L. Water Resource Economics. 3 hours. 3 hours lecture and 1 hour lab per week.
Undergraduate prerequisite: AAEC 2580 or ECON 2106.
The economic aspects of the use, supply, development, and management of water resources with special emphasis on river basin and project planning, benefit-cost analyses, water demands, and multiple use management of water resources.

AAEC(FINA) 4870/6870. Futures and Option Markets. 3 hours.
Undergraduate prerequisite: AAEC 2580 or ECON 2106.
Development, functions, and importance of futures and option markets. Futures and option contracts; issues such as speculation, the roles of commission houses, commodity exchanges, and clearinghouses; and the use of future contracts as instruments for financing business activities. Technical and fundamental trading theories.

AAEC 4910/6910. International Agribusiness Marketing and Management. 3 hours.
Undergraduate prerequisite: [((AAEC 2580 or ECON 2106) and (AAEC 3040 or AAEC 3100)) or permission of department] and Junior standing.
Graduate prerequisite: AAEC 6580-6580L.
Directed field study tour(s), site visits to agribusiness firms, and lectures in agribusiness marketing and management from an international perspective. Language, cultural, and environmental aspects of agricultural production, processing, and international marketing.

AAEC 4930/6930. Environmental Law and Governmental Regulation. 3 hours.
Not open to students with credit in AAEC(EHSC) 4250.
Regulatory theory, externalities and market failures, definition of key regulations affecting agribusiness, overview of local government law, and delineation of environmental laws relating to agriculture. Current environmental issues are related to statutory, administrative, and regulatory authorities.

AAEC 4980/6980. Agribusiness Management. 3 hours.
Undergraduate prerequisite: (AAEC 2110 or ACCT 2101) and (AAEC 3040 or AAEC 3100).
The basic skills needed to be an effective manager of an agribusiness; applying and integrating these skills into a workable approach to management; provides a step-by-step approach to the application of basic practical management skills in marketing, demand analysis, forecasting, finance, plant operations, and personnel.

AAEC 6580-6580L. Microeconomics: Theory with Applications. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: AAEC 3580 -3580L or permission of major.
Partial and general equilibrium analyses in the study of efficient resource allocation among households and firms. Perfect and imperfect output and input markets are investigated in terms of economic efficiency.

AAEC 6610. Quantitative Techniques in Agricultural Economics. 3 hours.
Prerequisite: STAT 4210 or STAT 6210 or permission of major.
Basic quantitative techniques in agricultural economic theory, emphasizing basic models used in the study of prices, marketing, and production.

AAEC 6630. Decision Theory for Resource Allocation. 3 hours.
Prerequisite: AAEC 6580-6580L.
Application of decision theory to natural and economic resources. Linear, nonlinear, and dynamic programming techniques for problems in economic and natural resource allocation.

AAEC 6760. Intermediate Agricultural Prices. 3 hours.
Prerequisite: AAEC 6580-6580L and AAEC 6610.
Price theory and statistical techniques that allow the student to advance beyond the introductory level of analyzing agricultural prices.

AAEC 6960. International Agricultural Trade. 3 hours.
Prerequisite: AAEC 6580-6580L.
Trade theory and an analysis of agricultural policies among nations.

AAEC 7000. Master's Research. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

AAEC 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

AAEC 7600. Environmental Economics and Policy Analysis. 3 hours.
Environmental policy in both mathematical and intuitive economics, including externalities, policy instruments, and implementation. Concepts are applied to United States environmental policy toward air and water pollution, hazardous substances, and implementation of environmental law.

(AAEC)FORS 7860. Resource Economics and Management. 3 hours.
Prerequisite: AAEC 6580-6580L or ECON 8000.
Economic and physical concepts of scarcity, the impact of market and social factors on resource use, and the optimal management of renewable and nonrenewable resources.

AAEC 8000. Special Readings in Agricultural Economics. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Literature, the concepts and analytical tools for production economics, marketing, or resource economics.

AAEC 8010. Seminar in Agricultural and Applied Economics. 1 hour. Repeatable for maximum 3 hours credit.
Prerequisite: AAEC 6580-6580L.
Agricultural policy, production, marketing, development, trade, agribusiness management or natural resources. Theoretical and methodological issues, empirical analyses, and firm/industry/academic policy and other research issues.

AAEC 8020. Topics in Agricultural and Applied Economics. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Agricultural policy, production, marketing, development, trade, agribusiness management or natural resources. Theoretical and methodological issues, empirical analyses, firm/industry policy, and other issues.

AAEC 8080. Production Economics: Theory and Application. 3 hours.
Prerequisite: AAEC 6580-6580L and AAEC 6610.
Economic theory of production, duality, applications, and modeling.

AAEC 8100. Applied Resource Policy and Project Analysis. 3 hours.
Prerequisite: AAEC 6580-6580L.
Economic analysis of contemporary rural natural resources, environmental policies, and agricultural policies and projects. Application of theory and techniques to local, state, and national problems and issues, particularly those affecting rural areas.

(AAEC)EHSC 8120. Roles and Responsibilities of Environmental Policy Makers. 2 hours.
Prerequisite: Permission of department.
Roles of science, engineering, law, journalism, economics, grass roots activism, and the legislative and regulatory process in the development of environmental policy.

AAEC 8140. Consumer Demand Theory. 3 hours.
Prerequisite: AAEC 6580-6580L and (STAT 4220 or STAT 6220).
Theoretical treatment of consumer demand. Utility theory and its assumptions, consumer behavior theory, and problems of application in agricultural and applied economics.

AAEC 8210. Agricultural Programs and Policy. 3 hours.
Alternative governmental programs and policies as they relate to the solution of specific agricultural problems.

AAEC 8300. Agricultural Economics Research. 2 hours.
Methodology, techniques, and guidance for individual research in problems of agricultural economics.

AAEC 8400. Agricultural Market Structure and Analysis. 3 hours.
Prerequisite: AAEC 6580-6580L.
The market in economic development and evaluation of structure, conduct, and performance in the United States agribusiness sector. Problems of market coordination and associated policy issues.

(AAEC)ECOL 8700. Environmental Policy and Management. 3 hours.
Evolution, form, and substance of United States federal policies and programs that address ecological problems, focusing on the nature of problems and alternatives for effective resolution.

AAEC 8710. Advanced Agricultural Development and Growth. 3 hours.
Prerequisite: AAEC 6580-6580L or ECON 8010.
Major economic problems of the agricultural sector of developing countries and a study of policy instruments which have been used to resolve these problems.

AAEC 8750. Natural Resource and Environmental Economics. 3 hours.
Prerequisite: AAEC 6580-6580L.
Management of natural and environmental resources. Major theoretical concepts will provide a basis for examination of efficient production and consumption allocation decisions related to natural resources. Emphasis will center on economic, institutional, and legal aspects which prevent private markets from efficiently valuing resources.

AAEC 8760. Topics in Natural Resource and Environmental Economics. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: AAEC 6580-6580L.
Classical and contemporary topics in natural resource and environmental economics following a seminar/discussion format.

AAEC 8800. Dynamic Optimization in Agricultural and Resource Economics. 3 hours.
Prerequisite: AAEC 6580-6580L and ECON 8000 and ECON 8110.
Dynamic optimization and optimal control techniques relevant to agricultural and resource economics. Calculus of variations, the maximum principle, dynamic programming, and both open-loop and closed-loop optimal control.

AAEC 8850. Risk and Uncertainty in Agricultural Decision Making. 3 hours.
Prerequisite: ECON 8020.
Applications of microeconomic theory to measure and assess the impact of risk on firm, consumer, and market decisions and welfare. Evaluation of main sources of risk, including price, production, and technological uncertainty. Identification of firm responses to risk in financing, marketing, insurance, and contractual arrangements.

AAEC 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

AAEC 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Agricultural Leadership, Education and Communication

Ray Herren, *Interim Head*
F. Richard Rohs, *Graduate Coordinator*,
542-8935
(109 Four Towers)

The purpose of the graduate program in agricultural extension is to provide an opportunity for Cooperative Extension Service personnel and others to broaden and strengthen their base of technical knowledge and add the dimension of human and social relations that is essential if one is to perform effectively the duties of a general adult/youth educator within the context of the public service function of the University.

The curriculum leading to the Master of Agricultural Extension (MAEXT) degree focuses on understanding the Cooperative Extension Service and how it works. Individual programs are built around the candidate's need for additional training in appropriate subject matter, human relations, communications, management, Cooperative Extension Service organization and methods, and informal teaching-learning.

Opportunities for study and research are offered in the Department of Agricultural Leadership, Education and Communication, College of Agricultural and Environmental Sciences, other departments and divisions in the College of Agricultural and Environmental Sciences, College of Family and Consumer Sciences, School of Forest Resources, other schools and colleges in the University and in the Cooperative Extension Service.

Agricultural Extension

AEXT 7050. Communication for Agricultural and Extension Educators. 3 hours.
Not open to students with credit in AGRI 5050.

Basic communication processes in diverse professional settings: personal interaction, small group, organizational, media.

AEXT 7210. Problem Analysis in Agricultural Extension Work. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
A topic or problem in Cooperative Extension significant to the candidate's area of work.

Agricultural Leadership

ALDR 5700/7700. International Agricultural Development. 3 hours.
International agricultural development programs described and studied, stressing the Developing World's perspective. Analysis of factors affecting success in leadership roles for international cooperation, transfer of technology, agricultural extension and education, and related program development. Case studies reviewed and discussed. Exploration of issues in international agriculture and human resource development. Course dynamics emphasize group discussions, projects, and reports.

ALDR 7000. Master's Research. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ALDR 7020. Program Evaluation. 3 hours.
Identifying and selecting evaluation models, planning an evaluation, collecting and analyzing evaluation data using various qualitative and quantitative methods relating evaluation to program change for agricultural and extension educational programs.

ALDR 7040. Programming for Agricultural Youth Groups. 3 hours.
History, philosophy, and organizational structure of Agricultural Youth Education; emphasis upon the needs of youth, teaching, program planning and evaluation methods, the management of volunteer leaders, volunteer leader development, and program and financial resources necessary for youth work.

ALDR 7070. Program Development for Agricultural Leaders. 3 hours.
Basic problems, principles, and procedures involved in developing programs by leaders in agricultural organizations. Topics include needs assessment and citizen involvement techniques, instructional and evaluation elements.

ALDR 7080. Agriculture and Extension Administration. 3 hours.
Administration and management of agricultural and extension educational programs and people. Four major domains of managerial activity; administrative, communications, supervision, and cognitive areas.

ALDR 7100. Directed Study in Agricultural Leadership. 3 hours. 3 hours lab per week.
Prerequisite: Permission of department.
Students gain experience in leadership roles in agricultural organizations, businesses, and/or institutions by working with current leaders in a learning laboratory situation.

ALDR 7110. Special Problems in Agricultural Leadership. 3 hours.
Prerequisite: Permission of department.
Specialized problems and training appropriate to the needs of the individual associated with agricultural organizations. Businesses and institutions will be studied to develop greater facility in the application of specific agricultural subject matter and leadership techniques.

ALDR 7200. Foundations of Agricultural Leadership. 3 hours.
An interdisciplinary analysis of current issues in the practice of leadership in contemporary and changing society particularly as they affect agricultural organizations and issues. Discussions of leadership theory, roles of leaders, skills for effective leadership, diversity issues, followership, and strategic planning will challenge students to think critically about leadership, enhance personal leadership performance and potential, and prepare for or expand leadership roles, and to become innovative and productive in dealing with challenges facing agricultural organizations today.

ALDR 7300. Group, Team, and Organizational Development in Agricultural Organizations. 3 hours.
An interdisciplinary course on the understanding of groups, teams, and organizations related to agricultural organizations. Theories of group dynamics and applications of problem-solving skills. Team building skills are studied with practical applications. Profit and nonprofit agricultural organizations are used as case studies.

ALDR 7400. Communication in Agricultural and Environmental Science. 3 hours.
Analysis of communication challenges faced by leaders in agricultural and environmental organizations and their constituents. Basic communication theory and targeted applications such as working with media, conducting advisory group meetings, marketing, negotiation, public affairs communication, networking among stakeholders, and conflict management and res-

olution required of leaders to sustain and improve organizational effectiveness.

ALDR 7500. Issues in Contemporary Agriculture. 3 hours.
Issues affecting agricultural industry. How agriculture fits into and affects societal, social, political, and economic forces that drive agriculture. Ethics, issues, and policies that drive agriculture.

Animal and Dairy Science

Larry L. Benyshek, *Head*
Mark Froetschel, *Graduate Coordinator,*
542-0985
(Animal & Dairy Science Complex)

The Doctor of Philosophy degree in animal and dairy science is offered with the opportunity to specialize in animal breeding, nutrition, physiology of reproduction, meats and muscle biology, and animal production. The program leading to the PhD degree in animal nutrition is also available to animal and dairy science students.

Graduate programs leading to the Master of Science degree in either animal science or dairy science are offered in all general areas of animal and dairy science. These programs are flexible enough to interest students who may want to consider the MS degree as a terminal degree and are also designed to accommodate those graduates who want to use the MS degree as a preparatory step toward the PhD degree. Courses in the department and appropriate courses in poultry science, biochemistry, statistics, microbiology, veterinary physiology, and other departments provide in-depth training and laboratory experience. Amino acid analyzers, gas-liquid chromatographs, a flame spectrophotometer, a gas flow Gieger tube detector, a whole body counter, an atomic absorption spectrophotometer, a sonoscope, a high pressure liquid chromatograph, liquid scintillation counters, gamma counters, ultracentrifuge, enzyme kinetic spectrophotometer, scanning and transmission electron microscopes, electrophoresis equipment, tissue culture incubators and other equipment are available for use in teaching and research. Research facilities include laboratories equipped to handle radioisotopes and many chemical and biological analyses, small and large animal metabolism rooms and equipment, large animal surgery laboratory, and research facilities on swine, horse, beef cattle, and dairy cattle farms located near the campus and in the state. Service of the University Computer Center is available for data processing.

Prospective students who desire financial aid may apply for assistance directly to the animal and dairy science department. A limited number of teaching and research assistantships for training students in both research and teaching and assistance to the faculty are available. Other assistantships are available through the Graduate School and application for these should be made directly to the graduate coordinator. Additional courses related to animal nutrition are listed under animal nutrition.

ADSC 4100/6100. Advanced Genetics of Livestock Improvement. 3 hours.
Undergraduate prerequisite: ADSC 3110 or permission of department.
The development of practical and genetically sound programs involving the study and application of genetic principles underlying selection, systems of mating, and performance testing. Major emphasis will be on characters of economic importance in meat animals.

(ADSC)FDST 4140/6140-4140L/6140L. Advanced Meat Science. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: FDST(MIBO) 4030/6030-4030L/6030L and FDST 4040/6040-4040L/6040L.
Meat processing and technology, scientific basis for meat as a food, USDA and FDA regulations governing meat processing, and the latest innovations in commercial meat processing.

ADSC 4150/6150. Microbial Ecology of the Rumen. 3 hours.
Undergraduate prerequisite: BCMB 4020/6020 or MIBO 4090/6090 or permission of department.
The rumen microbial ecosystem that will examine the biochemistry, ecology, nutrition, physiology, and taxonomy of rumen microorganisms. The symbiotic relationship between rumen microorganisms and the nutrition of the ruminant animal. Manipulation of rumen fermentation to maximize host-animal production.

(ADSC)ANNU 4360/6360. Ruminant Nutrition. 3 hours.
Undergraduate prerequisite: ADSC 3300-3300L and BCMB(BIOL)(CHEM) 3100.
Digestive physiology and metabolism of the rumen. Treats systematically the diversity of function, complex symbiotic relationships of the rumen microflora/microfauna, and the physiology and metabolism of the rumen as related to digestion, absorption, and utilization of nutrients.

(ADSC)ANNU(POUL) 4370/6370. Monogastric Nutrition. 3 hours.
Undergraduate prerequisite: [ADSC 3300-3300L or POUL 3750] and BCMB(BIOL)(CHEM) 3100.
Comparative nutrition of monogastric animals, with special but not exclusive, consideration of poultry and swine.

ADSC 4400/6400-4400L/6400L. Applied Reproduction in the Horse. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: ADSC 3400-3400L.
Management of reproduction in the horse for efficient production. Application of reproductive management systems.

ADSC 4410/6410-4410L/6410L. Applied Reproductive Management in Cattle and Swine. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: ADSC 3400-3400L.
Management of reproduction in farm animals for efficient livestock production. Application of reproductive management, principles associated with artificial insemination, embryo transfer, pregnancy detection, semen collection, and reproductive record management.

ADSC 6110-6110L. Experimental Methods in Animal Biotechnology. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or MIBO 3500 or permission of department.
Laboratory methods in molecular biology stressing recombinant DNA techniques. Experiments will include recombination, cloning, restriction analysis techniques, and optional experiments chosen by students.

ADSC(FDST) 6170-6170L. Experimental Techniques in Meat Science and Muscle Biology. 3 hours. 6 hours lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or STAT 4220 or STAT 6220 or permission of department.
Basic methods in laboratory techniques in meat science. Experiments will familiarize students from a wide variety of backgrounds with a number of laboratory techniques, including lipogenesis, muscle histology, enzyme kinetics, and muscle metabolism.

ADSC(FDST) 6890. Advanced Meat Science. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or permission of department.
The theories and methods used in meat science in determination of tissue growth; compositional techniques; muscle protein and lipid organization, structure, and function; biochemical conversion of muscle to meat, and its impact on meat quality and palatability in meat animals.

ADSC 7000. Master's Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ADSC 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ADSC 8090. Introduction to Quantitative Genetics of Livestock Improvement. 2 hours.
Prerequisite: ADSC 3110 and (STAT 4220 or STAT 6220).
The population genetic theory associated with livestock populations and their quantitative genetic improvement.

ADSC 8100. Statistical Methods in Animal and Dairy Science. 3 hours.
Prerequisite: [(STAT 4220 or STAT 6220) and ADSC 8110] or permission of department.
Experimental designs and statistical procedures particularly applicable to animal research with emphasis on multiple regression and least squares analysis.

ADSC 8110. Advanced Quantitative Genetics of Livestock Improvement. 3 hours.
Prerequisite: STAT 4220 or STAT 6220.
Advanced study of population and quantitative genetics.

ADSC 8200. Computational Techniques in Animal Breeding. 3 hours.
Prerequisite: ADSC 8100 or permission of department.
Computing algorithms useful for analysis of very large data sets in animal breeding. Class involves several programming projects and case studies on field data sets.

ADSC 8210. Advanced Statistical Methods in Animal Breeding. 3 hours.
Prerequisite: ADSC 8200 or permission of department.
Latest statistical and computing procedures useful in animal breeding. Includes nonlinear models, Bayesian

methods, and methods useful for analysis of molecular marker information.

ADSC 8400. Advanced Animal Reproduction. 3 hours.
Prerequisite: ADSC 3400-3400L.
Physiological mechanisms associated with reproduction in farm animals, including the reproductive endocrine system, the mechanism of hormone action and hormone measurement, and follicular development through parturition.

ADSC 8700. Special Problems in Animal and Dairy Science I. 3 hours.
Prerequisite: Permission of department.
Library and laboratory problems dealing with different phases of livestock production.

ADSC 8710. Special Problems in Animal and Dairy Science II. 3 hours.
Prerequisite: Permission of department.
Library and laboratory problems dealing with different phases of livestock production.

ADSC 8800. Graduate Seminar. 1 hour. Repeatable for maximum 4 hours credit. 1 hour lab per week.
Prerequisite: Permission of department.
Weekly meetings devoted to discussion of research problems.

ADSC 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ADSC 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Animal Nutrition

Gene M. Pesti, *Graduate Coordinator*,
542-1351
(Livestock-Poultry Building)

This program is interdepartmental, including the Departments of Animal and Dairy Science, and Poultry Science. It embraces both the basic and applied phases of nutrition including the metabolism, biochemistry, and physiology of minerals, lipids, carbohydrates, proteins, vitamins, etc., in monogastric and ruminant animals. Strong collateral support, through course offerings and research cooperation, also is available in the areas of biochemistry, physiology, genetics, statistics, veterinary medicine, and microbiology. Facilities for research include adequately equipped nutritional, biochemical, and physiological laboratories, experimental animal quarters for many farm and laboratory species and instrumentation for many types of metabolic studies including, for example, the use of isotopes. The goal is to provide a challenging program, supplying opportunity for students to develop their creative ability to the point where their knowledge and motivation will enable them to make major contributions and assume leadership in the nutrition profession.

ANNU(ADSC) 4360/6360. Ruminant Nutrition. 3 hours.
Undergraduate prerequisite: ADSC 3300-3300L and BCMB(BIOL)(CHEM) 3100.
Digestive physiology and metabolism of the rumen. Treats systematically the diversity of function, complex symbiotic relationships of the rumen microflora/microfauna, and the physiology and metabolism of the rumen as related to digestion, absorption, and utilization of nutrients.

ANNU(ADSC)(POUL) 4370/6370. Monogastric Nutrition. 3 hours.
Undergraduate prerequisite: [ADSC 3300-3300L or POUL 3750] and BCMB(BIOL)(CHEM) 3100.
Comparative nutrition of monogastric animals, with special but not exclusive, consideration of poultry and swine.

ANNU 8310. Bioenergetics in Animal Nutrition. 2 hours.
Prerequisite: BCMB 4010/6010.
Energy transformations in animals including application of thermodynamic principles to the conservation and conversion of energy in animals. The energy values of feedstuffs as determined by various methods will be evaluated.

ANNU 8320. Vitamins in Animal Nutrition. 2 hours.
Prerequisite: BCMB 4010/6010.
The chemistry and physiology of the vitamins and their roles in animal metabolism including cellular biochemistry and physiology of the vitamins.

ANNU 8330. Minerals in Animal Nutrition. 2 hours.
Prerequisite: BCMB 4010/6010.
Significance of minerals in animal nutrition with emphasis on the physical and chemical principles and dynamic behavior and function of individual elements in the organisms as a whole.

ANNU 8340. Proteins and Amino Acids in Animal Nutrition. 2 hours.
Prerequisite: BCMB 4010/6010.
Metabolism and utilization of dietary proteins and amino acids; methods of supplying amino acids for efficient utilization for maintenance, growth and the production products; evaluation of the quality of proteins to meet requirements; methods for separation of proteins, amino acid analysis and determination of protein quality will be studied.

ANNU 8350. Carbohydrates and Lipids in Animal Nutrition. 2 hours.
Prerequisite: BCMB 4010/6010.
The utilization and metabolism of carbohydrates and lipids by animals; biological properties of carbohydrate and lipid foods and their effects on absorption and metabolism of the nutrients of the animal diet will be evaluated.

ANNU 8380. Experimental Methods in Animal Nutrition. 3 hours. 1 hour lecture and 6 hours lab per week.
Prerequisite: CHEM 2211 and CHEM 2211L.
Biochemical nutrition methodology and its utilization in performing experiments, recording and interpreting data, and writing scientific reports.

ANNU 8390. Nutrition Seminar. 1 hour. Repeatable for maximum 4 hours credit. 1 hour lab per week.
Current problems and papers of scientific work in animal nutrition.

ANNU 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ANNU 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Biological and Agricultural Engineering

E. Dale Threadgill, *Head*
E. William Tollner, *Graduate Coordinator*, 542-3047
(Driftmier Engineering Center)

The Department of Biological and Agricultural Engineering offers programs of study leading to three degrees: MS with major in biological engineering, MS with major in agricultural engineering and PhD in biological and agricultural engineering. Students can focus on several fields of interest that include metabolic engineering, enzyme engineering, biosensors, biomechanics, bioprocessing, image analysis, artificial intelligence applications, decision support systems, electronics and controls, X-ray computed tomography, NMR spectroscopy, postharvest engineering, applied electrostatics, food engineering, crop modeling, agro-meteorology, environmental quality, water quality, soil and water engineering, bioresource conversion, and precision farming.

The department has 38 full-time faculty and more than 50 research projects housed in three units located at the Athens, Griffin, and Tifton campuses of the University. The principal facilities for academic instruction are located in the Driftmier Engineering Center on the Athens campus. Excellent research facilities and specialized modern laboratories are available not only on the Athens campus but also at the Griffin and Tifton campuses. The three locations provide exceptional opportunities for laboratory and field research under diverse environmental conditions. In addition, the department has aggressive interdisciplinary research programs with other departments in the College of Agricultural & Environmental Sciences, Division of Biological Sciences and College of Veterinary Medicine.

The department accepts applications from graduates with a BS or a MS degree in engineering, physics, chemistry, biological sciences, mathematics, food science, and agricultural sciences. Qualified applicants with a non-engineering degree are required to complete a prescribed set of undergraduate engineering science courses.

A candidate for a MS degree is required to complete 24 semester hours of course credit and 6 hours of thesis research. The primary goal of this course of study is to have the candidate acquire a) deeper understanding in the selected field of knowledge, b) ability to synthesize knowledge, c) rational problem solving skills, and d) confidence in conducting independent work.

The PhD course of study is designed to achieve proficiency in unifying the diverse knowledge bases of the biological, agricultural, physical, social, and engineering sciences to enable the student to lead in the discovery of engineering solutions critical to the development of complex biological and agricultural systems. The department places high value on advanced proficiency in mathematics, statistics, selected area(s) of science, and knowledge of research methods. The selection of courses must be guided to have the student acquire a) in-depth knowledge in selected area(s) of science, b) ability to integrate diverse knowledge, c) creative thinking ability for defining problems, and d) ability to conduct original research.

The department provides research and teaching assistantships to qualified candidates based on availability of funds. Applicants desiring financial assistance should apply directly to the Graduate Coordinator of the department by January 31. Applications from under-represented groups are highly encouraged.

ENGR(GEOG) 4111/6111-4111L/6111L. Atmospheric Thermodynamics. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MATH 2500 and PHYS 1212-1212L.
Undergraduate prerequisite or corequisite: MATH 2700 and (CHEM 1211 or CHEM 1311H or CHEM 1411) and (CSCI 1301-1301L or ENGR 1140).
An introduction to atmospheric thermodynamics with emphasis on the first and second laws of thermodynamics, equation of state for gases, moisture variables, adiabatic and diabatic processes of dry and moist air, phase changes of water, and atmospheric statics.

(ENGR)GEOG 4112/6112. Atmospheric Dynamics. 3 hours.
Undergraduate prerequisite: (GEOG 1112 and GEOG 1112L and MATH 2200) or permission of department.
A quantitative investigation of large-scale atmospheric motion. Equations of motion are derived from basic physical laws. Concepts of vorticity, quasi-geostrophic theory, and general circulation are addressed.

ENGR(MARS) 4113/6113-4113L/6113L. Introductory Geophysical Fluid Dynamics with Applications. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MATH 2500 and MATH 2700 and PHYS 1212-1212L and (GEOG(ENGR) 4112/6112 or MARS 4100/6100).
Second semester fluid dynamics course for graduate students and advanced undergraduates emphasizing quasi-geostrophic dynamics, balance models, Rossby, Kelvin and gravity waves, barotropic, baroclinic, inertial and convective instabilities, and the general circulation of rotating stratified fluids. Applications made to weather forecasting and ocean dynamics. Laboratory includes hands-on experiments and simulations.

ENGR 4131/6131-4131L/6131L. Introductory Atmospheric Physics. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MATH 2500 and PHYS 1212-1212L.
Undergraduate prerequisite or corequisite: MATH 2700 and (CHEM 1211 or CHEM 1311H or CHEM 1411) and (CSCI 1301-1301L or ENGR 1140).
An introduction to the physics of the atmosphere with emphasis on the laws of radiation, solar and terrestrial radiation, surface and atmospheric energy balances, cloud physics, precipitation formation, and atmospheric optical and electrical phenomena.

ENGR(GEOG) 4161/6161-4161L/6161L. Environmental Microclimatology. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: (MATH 2500 or MATH 2700) and PHYS 1211-1211L and [(BIOL 1103 and BIOL 1103L) or (BIOL 1104 and BIOL 1104L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L) or (BTNY 1220 and BTNY 1220L)].
An introduction to the interactions between the biosphere and atmosphere. Energy, moisture, and carbon exchange in the soil-plant-atmosphere continuum with applications to managed and natural environments. The impact of weather and climate on humans and domesticated animals. Elementary turbulent exchange theory will be introduced.

(ENGR)(CRSS)FORS(GEOL) 4170/6170. Hydrology, Geology, and Soils of Georgia. 3 hours.
Prerequisite: Permission of school.
This field course focuses on the physical environment of Georgia by examining the diverse geology, soils, and surface and subsurface hydrologic processes within the state. We will travel to all of Georgia's physiographic areas, visiting mines, farms, forests, wetlands, rivers, lakes, and estuaries to explore the influence of human activities on the physical environment.

ENGR(MARS) 4175/6175. Coastal Meteorology. 3 hours.
Undergraduate prerequisite: MATH 2500 and PHYS 1212-1212L and (MARS 1010-1010L or GEOG 1112).
Undergraduate prerequisite or corequisite: MATH 2700.
An introduction to air-sea-land interactions that occur at the boundaries of continents. The course will cover atmospheric radiation, thermodynamics, and hydrodynamics, mesoscale and synoptic scale weather systems, atmospheric boundary layers, and applications to engineering meteorology.

ENGR(GEOG) 4180/6180. Special Topics in Atmospheric Sciences. 3 hours.
Undergraduate prerequisite: Permission of department.
Special interest topics in atmospheric sciences.

ENGR 4210/6210. Linear Systems. 3 hours.
Undergraduate prerequisite: ENGR 2170.
Time and frequency domain analysis of linear systems, convolution, fourier series, and fourier transforms with applications.

ENGR 4220/6220. Feedback Control Systems. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ENGR 4210/6210.
The analysis and design of continuous and discrete time, and linear feedback control systems.

ENGR 4230/6230. Sensors and Transducers. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ENGR 2170.
Fundamentals of the sensing process, transducers and their environments and the measurement problem. Transducer types and modeling. Displacement, motion, pressure, fluid-flow, temperature measurements.

ENGR 4250/6250. Advanced Microcontrollers. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ENGR 4240.
Undergraduate prerequisite or corequisite: ENGR 3270.
Using the MC68HCII to solve practical engineering monitoring and control problems. A project-oriented course.

ENGR 4280/6280. Measurement Automation and Control. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ENGR 1140 and ENGR 2170.
The analysis, design, and programming of systems used for automatic data acquisition, measurement, and control.

ENGR 4350/6350. Introduction to Finite Element Analysis. 3 hours.
Undergraduate prerequisite: ENGR 2140 and MATH 2700.
Fundamental finite element theory for the solution of engineering problems. Geometrical modelling techniques, element selection, and tests for accuracy. Emphasis on problems in structural mechanics and elasticity.

ENGR 4360/6360. Advanced Topics in CAD/CAM. 3 hours.
Undergraduate prerequisite: ENGR 3300.
The use of computer aided design/computer aided manufacturing. Computer modeling of solid objects, advanced mechanism modelling, rapid prototyping and virtual reality.

ENGR 4420/6420. Industrial Ventilation Design and Control. 3 hours.
Undergraduate prerequisite: ENGR 2150 and ENGR 3150.
Engineering design of industrial ventilation systems including selection of fans, ductwork, diffusers, hoods, air cleaners, and humidifiers.

ENGR 4440/6440. Environmental Engineering I. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ENGR 3410 and ENGR 3440.
Engineering science and design related to treatment of drinking water and wastewater as well as the treatment and ultimate disposal of the sludges created during water treatment.

ENGR 4450/6450. Environmental Engineering II. 3 hours.
Undergraduate prerequisite: ENGR 3520 and ENGR 4480/6480.
Engineering science and design related to environmental modeling, solid waste management, and hazardous waste management. Concepts of risk assessment will also be introduced.

ENGR 4480/6480. Instrumentation for Environmental Quality. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: MATH 2700 and PHYS 1212-1212L.
Operation of instrumentation used to measure physical variables which determine environmental quality. The engineering design and application of measuring systems for airborne particulates, gaseous atmospheric contaminants, solar and environmental radiation, and noise will be emphasized.

ENGR 4510/6510. Biochemical Engineering. 3 hours.
Undergraduate prerequisite: ENGR 3520 and BCMB 4010/6010 and MIBO 3500.
Design and analysis of enzymatic and microbial biological reaction systems.

ENGR 4520/6520. Engineering and Design of Biological Processes II. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: ENGR 4510/6510.
Unit operations used for biological processing including filtration, centrifugation, cell disruption, isolation, purification, and polishing.

ENGR 4540/6540. Applied Machine Vision. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: Permission of department.
Automated vision systems to identification, measurement and quality control. Electromagnetic spectrum, illumination design, imaging sensor election, vision system calibration. Implementation of image processing algorithms for object recognition and classification.

ENGR 4550/6550. Processing Plant Design. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ENGR 3540.
Design of systems for processing, primarily based upon unit operations processes. Process simulation or modelling for optimization purposes will be applied to processing systems. Plant layout required for processing will be included.

ENGR 4740/6740. Biomaterials. 3 hours.
Undergraduate prerequisite: BIOL 1108-1108L and ENGR 2140.
Biomaterials and groundwork for topics such as mechanical, chemical, and thermal properties of replacement materials and tissues. Implantation of materials in the body is studied for the biological point of view.

ENGR 5930/7930. GPS with Engineering and GIS Applications. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ENGR 1120 or GEOG 4370/6370-4370L/6370L.
The Global Positioning System, Differential GPS, and Real Time Kinematic GPS. Applications of GPS to engineering and geographic information systems.

ENGR 6110. Momentum and Heat Transport Processes. 3 hours.
Prerequisite: (ENGR 3140 and ENGR 3150 and MATH 2700) or permission of major.
Transport processes with an emphasis on fluid mechanics and heat transfer, transport of momentum and energy in continuous media, introduction to approximate solutions.

ENGR 6130. Bioengineering Systems. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: (MATH 2700 and PHYS 1212-1212L) or permission of major.
Integrating physics, mathematics, engineering, and chemical and biological principles for analysis of plant and animal systems.

ENGR 6370. Material Science. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 3300.
Properties and selection of engineering materials. Structure of solids and the effects of solidification, forming and heat treating operations on material properties.

ENGR 6410. Open Channel Hydraulics and Sediment Transport. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Fundamental mass, energy, and momentum transport relations in water flows open to the atmosphere. Channel design and measurement of flows in natural channel. Sediment transport relations are introduced.

ENGR 6530. Monitoring and Control of Biological Processes. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: ENGR 4510/6510.
Concepts of biological process controls; modern control techniques and optimization of batch, fed-batch and continuous bioreactors, and other biological systems.

ENGR 6580. Directed Readings in Bioconversion Engineering. 3 hours. 4 hours lab per week.
Prerequisite: (CHEM 2100 and CHEM 2100L and MIBO 3500 and MATH 2700 and ENGR 3140) or permission of major.

Quantitative description of aerobic, facultative, and anaerobic fungal/microbial modes for biotransformation of organic compounds in natural and controlled environments, with emphasis on mathematical representation of mechanisms involved and mechanisms manipulation.

ENGR 6640. Advanced Strength of Materials. 3 hours.
Not open to students with credit in ENGR 6630.
Prerequisite: ENGR 2140.
Advanced topics in strength of materials. Determining the stress and strain on members under non-linear loading.

ENGR 6760. Biomechanics. 3 hours.
Prerequisite: ENGR 2140.
The principles of engineering dynamics and strength of materials will be applied to biological systems with particular focus on the human body and orthopedics.

ENGR 6910. Research Methods. 2 hours.
Prerequisite: Permission of department.
The philosophy of engineering research, research methodology, review of the departmental research programs, and writing and presenting thesis and dissertation proposals and grant proposals.

ENGR 6920. Engineering Design. 3 hours. 4 hours lab per week.
Prerequisite: Permission of department.
Fundamentals of engineering design, problem selection, and application of design principles to a supervised project.

ENGR(PHYS) 6921. Engineering Physics Design Project. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: PHYS 6670L.
Fundamentals of engineering design with emphasis toward integrating engineering science and physics knowledge in team projects. Problem selection and application of design principles will be stressed.

ENGR(CSCI) 6922. Computer Systems Engineering Design Project. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: Permission of department.
Fundamentals of engineering design with emphasis toward integrating engineering science and computer science knowledge in team projects. Problem selection and application of design principles will be stressed.

ENGR 7000. Master's Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ENGR 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ENGR 7430. Nonpoint Source Modeling. 3 hours.
Prerequisite: MATH 2200 and MATH 2200L and PHYS 1111-1111L and CHEM 1212 and CHEM 1212L.
Watershed systems, hydrologic processes and pollutant transport processes; structure and capabilities of current watershed computer models; "hands-on" use of some current watershed models; and written and oral reports on the model application to an example watershed.

ENGR 7900. Graduate Internship. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Coordinated and planned work experience with cooperating industries or agencies.

ENGR 8250. Advanced Control Systems. 3 hours.
Prerequisite: ENGR 4220/6220 or permission of major.
Advanced control techniques. Practical aspects of control design.

ENGR 8290. Advanced Instrumentation. 3 hours. 6 hours lab per week.
Prerequisite: ENGR 4230/6230 or permission of major.
The use of sensors and advanced instrumentation in engineering research applications.

ENGR 8420. Theory of Drainage - Saturated Flow. 3 hours.
Prerequisite: (MATH 2700 and CRSS 4600/6600-4600L/6600L) or permission of department.
The theory of saturated water flow in porous media. Steady and unsteady flow will be considered. Applications to agricultural drainage and well hydraulics will be discussed.

ENGR 8550. Non-Destructive Characterization of Biological Materials. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 6130.
Techniques for non-destructive characterization of biological materials or systems. Topics may vary from year to year.

ENGR 8580. Compost Facility Engineering. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 6580 or permission of major.
Factors impacting the design and operation of large scale composting facilities.

ENGR 8930. System Simulation. 3 hours.
Prerequisite: Permission of department.
Solution of engineering/management problems in biological and agricultural systems through computer modeling and simulation of continuous-time and discrete-event systems. Deterministic and stochastic systems will be considered. Introduction to system stability and optimization concepts.

(ENGR)CSCI 8940. Computational Intelligence. 4 hours.
Prerequisite: CSCI(PHIL) 4550/6550 or permission of department.
Programs that solve complex problems in a particular domain, typically independent of knowledge used to direct the search for an optimal solution. Approaches include simulated annealing, genetic algorithms, neural networks.

ENGR 8950. Graduate Seminar. 1 hour. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Presentations/discussions related to engineering research, teaching, design, and service presented by students, faculty, and industry leaders.

ENGR 8980. Advanced Topics in Biological Engineering. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Advanced directed readings in special topics in biological engineering in an area(s) of interest to the student.

ENGR 8990. Advanced Topics in Engineering. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Advanced directed readings in special topics in engineering in an area of interest to the student.

ENGR 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ENGR 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Crop and Soil Sciences

Albert E. Smith, Jr., *Head*
Nicholas S. Hill, *Graduate Coordinator*, 542-0923
(Plant Sciences Building)

The department offers a professional Master of Crop and Soil Science (MCSS) degree and the MS and PhD degrees. The MCSS is a non-thesis degree requiring specified graduate level course work, including an internship or a special problems course. This is a degree option for individuals interested in obtaining graduate training but do not wish to conduct research. Graduate training leading to the MS and PhD degrees is available in all phases of crop and soil sciences including international and sustainable agriculture. In-depth instruction and research are emphasized in both crop and soil science. Areas of major specialization in crop science are: plant breeding and genetics, physiology, weed control, crop production and management, and forage quality and utilization. Areas of major specialization in soils are: chemistry, physics, environmental physics, classification and genesis, soil erosion and conservation, fertility and plant nutrition, microbiology and mineralogy. A range of environmentally-oriented research opportunities are available within the crop and soil science areas. Facilities for graduate training include three well-equipped Experiment Stations (housing modern analytical equipment, growth chambers, greenhouses and field plot facilities), along with seven field research centers located throughout the state. Cooperative studies are encouraged with other departments at the University, with the Institute of Ecology and the Savannah River Ecology Laboratory, and with federal research laboratories in the area (USDA/ARS, EPA). Cooperative projects with scientists at the Volcani Center in Israel are also available.

Departmental requirements include attendance at graduate seminars. Coursework and research topics are individually determined in consultation with the student's advisory committee.

Students with strong backgrounds in biological, geological, physical, chemical, or environmental sciences are encouraged to apply as prospective candidates for graduate training.

CRSS 4040/6040. Plant Breeding. 3 hours.
Undergraduate prerequisite: PGEN 3580-3580L or permission of major.
Fundamental principles and theories utilized in the science of plant breeding and cultivar development and the role breeding plays in crop improvement.

(CRSS)(ENGR)FORS(GEOL) 4170/6170. Hydrology, Geology, and Soils of Georgia. 3 hours.
Prerequisite: Permission of school.
This field course focuses on the physical environment of Georgia by examining the diverse geology, soils, and surface and subsurface hydrologic processes within the state. We will travel to all of Georgia's physiographic areas, visiting mines, farms, forests, wetlands, rivers, lakes, and estuaries to explore the influence of human activities on the physical environment.

CRSS(BTNY) 4210/6210. Seed Physiology. 3 hours.
Undergraduate prerequisite: [CHEM 2100 or CHEM 2211 or BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010] and [PGEN 3580-3580L or GENE(BIOL) 3200 or BTNY(CRSS)(BIOL) 4500/6500].
Graduate prerequisite: [BCMB 4010/6010 or BCMB 6000] and [BTNY(CRSS)(BIOL) 4500/6500 or BTNY 8100].
Undergraduate corequisite: CRSS 3300 or HORT 4210/6210 or HORT 4440/6440-4440L/6440L or BTNY 3830-3830L.
Graduate corequisite: HORT 4210/6210 or HORT 4440/6440-4440L/6440L or BTNY 6830.
Regulation of anabolic and catabolic events during seed development, maturation, and germination processes. Ecophysiological consequences of dormancy variables, and agricultural and industrial significance of seed physiology.

CRSS 4220/6220. Topics in Crop and Soil Sciences. 1-4 hours. Repeatable for maximum 12 hours credit.
Topics and methods in Crop and Soil Sciences with a different timely topic each semester, including new areas of inquiry in crop and soil sciences.

(CRSS)ENTO 4250/6250-4250L/6250L. Pesticide Management and Utilization. 3 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CHEM 1212 and CHEM 1212L.
Practical management and utilization of pesticides in urban and agricultural environments. Subject areas include classification of insecticides, herbicides, and fungicides, etc., their general chemical and toxicological properties, deployment philosophy, hazards and environmental impact, formulation and application, safety and disposal, and management of pesticide resistance.

CRSS 4260/6260. Forage Management and Utilization. 3 hours.
Undergraduate prerequisite: CRSS 2010-2010L or permission of department.
Characteristics of forage species; establishment, physiology, and morphology effects on management; forage quality and utilization by livestock; grazing management; hay and silage; forages for wildlife and conservation.

CRSS 4340/6340. Weed Science. 3 hours.
Prerequisite: CHEM 1211 and CHEM 1211L.
Fundamentals of weed biology; cultural and chemical weed control; properties and uses of herbicides and herbicide application equipment; and current systems for weed management in cropping programs.

CRSS 4340L/6340L. Weed Science Laboratory. 1 hour. 2 hours lab per week.
Undergraduate corequisite: CRSS 4340/6340.
Weed identification; symptomology of herbicide action; calibration of herbicide application equipment.

(CRSS)GEOG 4375/6375. GIS Applications in Agriculture. 4 hours.
Undergraduate prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or ENGR 1120 or GEOG 4330/6330-4330L/6330L or GEOG 4370/6370-4370L/6370L.
An exploration of the uses of Geographic Information Science (GIS) technology in agricultural applications. Basics of Global Positioning Systems (GPS) for location reference, GIS for field investigation, and remote sensing for crop and soil evaluation will be explored. Construction of GIS databases for precision farming and watershed management applications will be required.

CRSS 4400/6400. Crop Ecology. 3 hours.
Undergraduate prerequisite: CRSS 2010-2010L or BTNY 1210-1210L or permission of major.
World population growth and food production problems; origin, distribution, and adaptation of tropical, subtropical, and temperate crop plants as influenced by environment with emphasis on climatic factors.

(CRSS)(BIOL)BTNY 4500/6500. Introduction to Gene Technology. 3 hours.
Undergraduate prerequisite: GENE(BIOL) 3200.
Methods and applications of gene technology (recombinant DNA) and related concepts in molecular biology. These will include structure and synthesis of macromolecules; cDNA and genomic cloning, polymerase chain reaction; molecular markers and mapping; gene isolation strategies; and various host-vector systems.

CRSS 4520/6520. Field Soil and Site Assessment. 3 hours.
Undergraduate prerequisite: (CRSS 4540/6540-4540L/6540L and CRSS 4600/6600-4600L/6600L) or permission of department.
How to assess a site to determine if the soil places any limitations on land use. Topics covered include soil sampling, soil landscapes, wetland and hydric soils, septic systems, and land application of waste.

CRSS(GEOL) 4540/6540-4540L/6540L. Pedology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or permission of department.
Soils as a natural component of the ecosystem, including morphology, landscape distribution, formation, identification of diagnostic horizons and features, and classification.

CRSS 4580/6580-4580L/6580L. Soil Erosion and Conservation. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: CRSS(FORS) 3060-3060L or permission of department.
Mechanisms of soil erosion and sediment production; infiltration, runoff, and sediment transport in agricultural, forestry, and urban environments. Erosion and sediment control principles and practices. Impact of erosion and sediment on productivity and environmental quality.

CRSS 4590/6590-4590L/6590L. Soil Fertility. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CRSS 3050-3050L or CRSS(FORS)3060-3060L or permission of major.
Soil conditions affecting availability of plant nutrients; methods of determining soil fertility and insufficiency of plant nutrients in soils, and interpretation of chemical and biological measurements as related to fertility maintenance and good soil management.

CRSS 4600/6600-4600L/6600L. Soil Physics. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: [(CRSS 3050-3050L or CRSS(FORS) 3060-3060L) and MATH 2200 and (PHYS 1111-1111L or PHYS 1211-1211L)].
Graduate prerequisite: MATH 2210.
Physical properties and process of soils. Water, heat, and solute movement in soils.

CRSS(MIBO) 4610/6610-4610L/6610L. Soil Microbiology. 3 hours. 1 hour lecture and 4 hours lab per week.
Microorganisms in soil and their effect on nutrient recycling, especially as it relates to environmental quality and crop production.

CRSS 4660/6660-4660L/6660L. Chemical Analysis of Environmental Samples. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: CHEM 2300 and CHEM 2300L.
Analysis of soils, sediment, rocks, water for important organic and inorganic contaminants. Chromatography, atomic adsorption, and plasma emission spectroscopy, field sampling and measurements. Quality assurance/quality control, data reporting, computer use in analysis.

CRSS 4670/6670. Environmental Soil Chemistry. 3 hours.
Undergraduate prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or permission of department.
Environmental soil chemistry applies and extends the concepts of chemistry and physics to the investigation of problems related to the physical, chemical, and biological characteristics of soil and their importance in relation to the management of contaminants, pesticides, and production inputs.

CRSS 4670L/6670L. Environmental Soil Chemistry Laboratory. 1 hour. 2 hours lab per week.
Undergraduate prerequisite: (CRSS 3050-3050L or CRSS(FORS) 3060-3060L) and CHEM 2300 and CHEM 2300L.
Undergraduate corequisite: CRSS 4670/6670.
Laboratory evaluation of soil chemical properties.

(CRSS)ENTO(PATH) 4740/6740-4740L/6740L. Integrated Pest Management. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ENTO 3740-3740L or PATH 3530-3530L or CRSS 4340/6340.
The utilization and integration of pest control tactics (cultural methods, biological control, pesticides, host resistance) for management of insects, pathogens, and weeds. The major methodologies for controlling pests are discussed individually and within the context of profitable production of selected commodities followed by discussion of multiple pest management using integrated control techniques.

(CRSS)HORT 4800/6800. Agricultural Biotechnology. 3 hours.
Undergraduate prerequisite: BIOL 1107-1107L and CHEM 1211 and CHEM 1211L.
Structure/manipulation of DNA and inheritance of genes, the current impact of biotechnology on crop production and animal agriculture. Regulatory, intellectual property, environmental, and market issues specific to transgenic crops.

CRSS(ANTH)(ECOL)(GEOG)(HORT) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Undergraduate prerequisite: Permission of department.
Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

CRSS(ANTH)(ECOL)(GEOG)(HORT) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3-6 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in CRSS(HORT)(ANTH) 4940/6940.
Prerequisite: CRSS(HORT)(ANTH) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.

CRSS 6360. Weed Science Field Trip. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: CRSS 4340/6340 and CRSS 4340L/6340L.
Four-day field trip to select parts of the Southeast to observe practical aspects of weed science in the field as related to weed identification, biology, and management.

CRSS 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a masters degree under the direction of faculty members.

CRSS 7050. Principles of Field Crop Production. 3 hours.
Prerequisite: [CRSS 3300 and CRSS 4300/6300] or permission of department.
Effect of environment and heredity on crop production, including light, temperature, water, fertility, and other factors affecting plant growth and management.

CRSS 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

CRSS 8000. Soil Physical Chemistry. 3 hours.
Prerequisite: [CHEM 3100 or (CHEM 2300 and CHEM 2300L)] and [CRSS(FORS) 3060-3060L or GEOL 1250-1250L] or permission of department.
Physical and surface chemistry applied to soil-water systems. Topics include precipitation-dissolution, redox chemistry, complexation, structure of soil-water interface, adsorption mechanisms, use of computer models to simulate soil chemical reactions, and environmental applications.

CRSS 8010. Research Methods. 3 hours.
Scientific method, thesis and journal article preparation, manuscript review, seminar presentation, grant applications, and computer use related to these topics.

(CRSS)FORS(HORT) 8070. Plant Biotechnology Research Journal Seminar. 1 hour. Repeatable for maximum 4 hours credit.
Critical review and discussion of current research reports in journals relating to plant biotechnology.

CRSS 8100. Advanced Crop and Soil Science Seminar. 1 hour. Repeatable for maximum 2 hours credit.
Instruction and practice in oral scientific presentations. A literature search within a general topic area unrelated to degree research, and a formal seminar on the subject, are required.

CRSS 8210. Special Problems in Crop and Soil Science. 1-3 hours. Repeatable for maximum 3 hours credit.
The planning, completion, and reporting of short-term projects in crop and soil sciences, other than thesis or dissertation, conducted in the laboratory, greenhouse, or field.

CRSS 8220. Advanced Topics in Crop and Soil Sciences. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Advanced topics and methods in Crop and Soil Science, including tropical soil management, application of geographic information systems to crop production, DRIS analysis, advanced analytical methods, microclimatology, crop modeling, and other timely topics.

CRSS 8280-8280L. Crops and Microclimate. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BTNY 3830-3830L or permission of department.
Effects of aerial factors (radiation, humidity, temperature, wind, atmospheric gases) on crop growth and productivity are discussed, along with measurement techniques for each. Emphasis is on quantitative analysis of processes occurring at the leaf, whole plant, and canopy levels.

CRSS 8330-8330L. Physiology of Herbicide Action. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: CRSS 4340/6340-4340L/6340L or permission of department.

Herbicide action in crops and weeds, including uptake through roots, penetration through leaves, and translocation in the plant; mechanism and mode of action of individual herbicides as well as metabolism of xenobiotics in the plant. Laboratory component consists of research techniques used in herbicide physiology research.

CRSS 8340-8340L. Environmental Aspects of Herbicide Use. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: CRSS 4340/6340-4340L/6340L or permission of department.
Behavior of herbicides in soil, water, and air; transfer and transformation processes affecting herbicides. Laboratory introduces research techniques necessary to examine herbicide transfer and transformation.

CRSS 8350. Weed Ecology. 2 hours.
Prerequisite: CRSS 4340/6340-4340L/6340L or permission of department.
Weed succession and development in crops, weed-crop interference, and physiological aspects of weed-crop interactions with an emphasis on modeling.

CRSS 8520. Advanced Soil Fertility. 3 hours.
Prerequisite: (CRSS 4590/6590-4590L/6590L and CHEM 2300 and CHEM 2300L) or permission of department.
Physical, chemical, and biological properties of soil; plant mineral nutrient availability; theory and use of modern soil testing methods. Includes soil, environmental, and management factors that control crop use of applied chemical fertilizers and other sources of plant nutrients.

CRSS 8540-8540L. Soil Mineralogy. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: CRSS 4540/6540-4540L/6540L or CRSS 4670/6670 or GEOL 4300/6300 or permission of department.
Mineral structure, properties, weathering, formation, and identification as related to soil behavior, distribution, and genesis. Application of laboratory techniques for identification and quantification of minerals in soils and sediments.

CRSS 8600. Advanced Soil Physics: Numerical Method. 3 hours.
Prerequisite: [MATH 2210 and MATH 2210L and CRSS 4600/6600-4600L/6600L] or permission of department.
Numerical approach to solving water and solute transport equations. Two-dimensional water and solute movement in unsaturated soils and shallow groundwater are examined by solving the governing partial differential equations using a finite difference numerical technique.

CRSS 8610. Advanced Soil Physics: Spatial Modeling. 3 hours.
Prerequisite: [MATH 2210 and MATH 2210L and CRSS 4600/6600-4600L/6600L] or permission of department.
Methods of scaling up water and solute transport predictions from the plot to the field, watershed, and aquifer-loading scale. Methods discussed include stochastic approaches based on the transfer function and deterministic models that interface with geographic information systems.

CRSS(ECOL) 8650. Nutrient Cycling Models. 3 hours.
Prerequisite: [CSCI 7010 and CRSS(MIBO) 4610/6610-4610L/6610L] or permission of department.
Structure, function, and performance of current nutrient cycling models used to simulate carbon, nitrogen, phosphorus, and sulfur transformations in the soil.

(CRSS)ECOL 8660-8660L. Soil Biology and Ecology. 4 hours. 2 hours lecture and 4 hours lab per week.
Not open to students with credit in ECOL(CRSS) 6650-6650L.
Prerequisite: ECOL(BIOL) 3500-3500L or CRSS 4590/6590-4590L/6590L or CRSS(MIBO) 4610/6610-4610L/6610L.
Organisms in the soil environment, with emphasis on macrobiota and their functional roles in food webs and ecosystem processes.

(CRSS)GEOL 8760. Organic Contaminant Hydrogeology. 3 hours.
Prerequisite: (CHEM 2100 and CHEM 2100L) or (CHEM 2212 and CHEM 2212L) or permission of department.
Physical and chemical processes controlling the mobility and fate of organic contaminants in soils, sediments, surface, and ground waters. Processes include biotic and abiotic (hydrolysis, volatilization, sorption, redox, and photochemical) reactions in the natural systems. Relationships between chemical structure and reactivity in the environment.

CRSS(BTNY) 8870. Advanced Plant Genetics. 3 hours.
Not open to students with credit in CRSS(BTNY) 8900.
Prerequisite: BTNY 8100 or permission of department.
The history, and state of the art, in genetic and molecular analysis of complex eukaryotic genomes. We will discuss in detail how genomes can be dissected into manageable parts that can be analyzed by a variety of molecular techniques, to investigate questions in genetics, breeding, and evolution. Special emphasis will be placed upon molecular analysis of quantitative inheritance, genetic mapping by a variety of techniques,

physical mapping and map-based cloning, with examples drawn from various genome projects ranging from Arabidopsis to human.

CRSS 8880. Quantitative Aspects of Plant Breeding. 3 hours.
Prerequisite: [CRSS 4040/6040 and STAT 6220] or permission of department.
Quantitative and population plant genetics and their interrelationship with plant breeding. Genetic and environmental variation and how they relate to selection procedures and choice of type of variety.

CRSS 8890-8890L. Plant Cytogenetics: Behavior and Evolution of the Plant Genome. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BTNY 8100 or permission of department.
Classical and molecular cytogenetics are integrated to explain the reproductive behavior of angiosperms, the applications of cytogenetics to plant improvement, the study of plant genetics, and the structure and evolution of the plant genome.

CRSS 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

CRSS 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Entomology

Raymond Noblet, *Head*
Darold P. Batzer, *Graduate Coordinator*,
542-2276
(Biological Sciences Building)

The Department of Entomology offers graduate work leading to the professional MPPPM (Master of Plant Protection and Pest Management) degree, and the MS and PhD degrees. The MPPPM is a non-thesis degree requiring specified graduate level course work, two semesters of internship, plus selected graduate level electives. The MS and PhD are research degrees requiring course work plus original research leading to a thesis or dissertation. Students holding the baccalaureate degree are normally admitted at the MS level but may petition to bypass this degree and work towards the PhD after meeting specific departmental requirements.

In addition to the faculty at the Athens campus, students may carry out research under the direction of faculty at the Griffin or Tifton campuses. Facilities and opportunities for studies on applied aspects of entomological problems and integrated pest management are emphasized at the stations. On the Athens campus, faculty joint staffed with the Departments of Ecology, Genetics, Biochemistry and Molecular Biology, Biological Sciences Division, the Museum of Natural History, and the interdisciplinary toxicology program enable students to earn a degree in entomology with training in related disciplines.

Facilities outside the department include electron transmission and scanning microscopes, cell sorter, monoclonal and sequencing labs, computer facilities, nine agricultural research farms, forest research areas, the Museum of Natural History, and the U.S.D.A., U.S.E.P.A., and Forestry laboratories. Particularly good library facilities in entomology are available at the Athens campus.

Teaching and research assistantships are available from the department. Other financial aid is available through the Graduate School, but applications should be submitted to the Department of Entomology. Students without previous courses in entomology, genetics, or biochemistry may be required to make up deficiencies.

ENTO 4000/6000-4000L/6000L. General Entomology. 3 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: BIOL 1107-1107L and BIOL 1108-1108L.
Functional anatomy and physiology, behavior, ecology, insects as vectors of pathogens, chemical and biological control of pests. Laboratory sessions are devoted primarily to collecting and the identification of major families of insects.

ENTO 4010/6010-4010L/6010L. Insect Taxonomy. 5 hours. 3 hours lecture and 6 hours lab per week.
Undergraduate prerequisite: ENTO 4000/6000-4000L/6000L or permission of department.
Insect identification, classification, and phylogeny; collection and preparation techniques for insect specimens; introduction to theoretical and practical aspects of systematics.

(ENTO)BCMB 4200/6200. Biotechnology. 3 hours.
Not open to students with credit in BCMB 4130/6130.
Undergraduate prerequisite: BCMB(BIOL)(CHEM) 3100 and GENE(BIOL) 3200.
Undergraduate prerequisite or corequisite: MIBO 3500 or CBIO(BIOL) 3400.
Applied aspects of biochemistry and molecular biology in various fields, with emphasis on the use of recombinant DNA methods and protein engineering.

ENTO(CRSS) 4250/6250-4250L/6250L. Pesticide Management and Utilization. 3 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CHEM 1212 and CHEM 1212L.
Practical management and utilization of pesticides in urban and agricultural environments. Subject areas include classification of insecticides, herbicides, and fungicides, etc., their general chemical and toxicological properties, deployment philosophy, hazards and environmental impact, formulation and application, safety and disposal, and management of pesticide resistance.

(ENTO)ANTH(BIOL)(BTNY)(ECOL) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: Permission of department.
Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

ENTO 4300/6300-4300L/6300L. Bee Biology, Culture, and Management. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: [(BIOL 1104 and BIOL 1104L or BIOL 1108-1108L) and ENTO 4000/6000-4000L/6000L] or permission of department.
The life history, ecology, behavior, and pollinating activities of honey bees and other bees of the Southeast, including theory and practice of bee culture.

(ENTO)PATH 4360/6360. Ornamental Pest Management. 3 hours.
Prerequisite or corequisite: PATH 3530-3530L.
Corequisite: ENTO 4000/6000-4000L/6000L.
Introduction to pest management on ornamental crops grown in greenhouses and nurseries, with emphasis on insects and diseases. Emphasis on production practices and their influence on pest population development. Scouting, integrated pest management, chemical pesticides, and pest identification will be covered.

ENTO 4400/6400-4400L/6400L. Insect Behavior. 3 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: ENTO 4000/6000-4000L/6000L.
Principles of behavior; communication, sexual behavior, anti-predator adaptations, insect-plant interactions, and insect sociality.

ENTO(CRSS)(PATH) 4740/6740-4740L/6740L. Integrated Pest Management. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ENTO 3740-3740L or PATH 3530-3530L or CRSS 4340/6340.
The utilization and integration of pest control tactics (cultural methods, biological control, pesticides, host resistance) for management of insects, pathogens, and weeds. The major methodologies for controlling pests are discussed individually and within the context of profitable production of selected commodities followed by discussion of multiple pest management using integrated control techniques.

ENTO 4820/6820-4820L/6820L. Entomology in Natural Resources Management. 3 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: BIOL 1104-1104L or BIOL 1108-1108L or permission of department.
Arthropods important in management of forest resources including timber, wildlife, and recreation.

ENTO 5730/7730-5730L/7730L. Entomology for Teachers. 3 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: Permission of department.
Insects and related forms, their identification, and life habits, with emphasis on their use in pre-college life science curricula.

ENTO 6130. Internship in Crop Protection and Pest Management. 1 hour.
Prerequisite: Permission of department.
Working experience with public or private agencies concerned with pest management.

ENTO 6150. Insect Physiology. 3 hours.
Prerequisite: ENTO 4000/6000-4000L/6000L and [BCMB(BIOL)(CHEM) 3100 or CBIO(BIOL) 3400].
Organization and function of organ systems in insects, emphasizing evolutionary and molecular perspectives.

ENTO 6500-6500L. Insect Ecology. 3 hours. 2 hours lecture and 3 hours lab per week.
Special ecology of insects in natural and managed ecosystems.

ENTO 6600-6600L. Insect Morphology. 3 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: ENTO 4010/6010-4010L/6010L or permission of department.
Form and function of insect anatomy in phylogenetic context; techniques for dissection, preparation and illustration of insect morphology.

ENTO(MIBO) 6670-6670L. Insect Pathogens. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Insect pathology, including history, classification of diseases, insect response to pathogens, normal insect/microbe ecology, and the production and use of insect pathogens for pest control.

ENTO 6940-6940L. Aquatic Entomology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ENTO 4000/6000-4000L/6000L or permission of department.
Ecology, life history, biology, and taxonomy of aquatic insects, their role in ecosystems and biological monitoring.

ENTO 7000. Master's Research. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ENTO 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ENTO 8000. Entomology Seminar. 1-2 hours. Repeatable for maximum 15 hours credit.
Entomology, both fundamental and applied, including literature reviews and discussion of recent events.

ENTO 8050. Principles of Systematics. 2 hours. 3 hours lab per week.
Prerequisite: ENTO 4000/6000-4000L/6000L or permission of department.
History and philosophy of systematics, the science of biological classification, with special reference to insects. Methods of analysis and types of data in systematic biology.

ENTO 8080. Topics in Insect Physiology and Biochemistry. 2 hours. Repeatable for maximum 6 hours credit. 2 hours lab per week.
Prerequisite: ENTO 6150 or permission of department.
Special topics in insect physiology and biochemistry.

ENTO 8100. Evolution of Insects. 2 hours. 3 hours lab per week.
Prerequisite: ENTO 4000/6000-4000L/6000L or permission of department.
Organic evolution, the history of evolutionary thought, methods for studying evolution, and contemporary topics in evolutionary theory with a special emphasis on insects.

(ENTO)(BTNY)ECOL 8150. Wetland Ecology. 3 hours.
Prerequisite: Permission of department.
Principles of ecology, elemental cycling, hydrology, policy and management of marine and freshwater wetlands.

(ENTO)(BTNY)ECOL 8150L. Wetland Ecology Laboratory. 1 hour. 3 hours lab per week.
Prerequisite: ECOL(ENTO)(BTNY) 8150 or permission of department.
Techniques for the study of marine and freshwater wetlands. Optional weekend field trips will explore distant wetland sites.

ENTO 8310. Insect/Plant Interactions. 2 hours.
Prerequisite: ENTO 6150 or permission of department.
Chemical and physical description of insect/plant interactions. Emphasis placed on the plant surface and its role in insect behavior.

ENTO 8570. Molecular Entomology. 2 hours.
Prerequisite: ENTO 6150 or permission of department.
Contemporary issues in insect physiology, development, behavior, and control, with an emphasis on the latest molecular information.

ENTO 8650. Vector Biology. 3 hours. 2 hours lecture and 3 hours lab per week.
Identification, ecology, physiology, and biochemistry of arthropod vectors and associated disease-causing parasites; vector-host and vector-parasite interactions; current research topics.

ENTO 8710-8710L. Immature Insects. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: ENTO 4000/6000-4000L/6000L or permission of department.
Classification, identification, biology, and economic significance of insect larvae.

ENTO 8820. Biological Control. 3 hours.
Prerequisite: ENTO 4000/6000-4000L/6000L or permission of department.
Biological control of arthropod pests and weeds; biology of parasitoids and predators; historical perspective, ecological basis and implementation in traditional and alternative agricultural systems; integration with other pest management tactics.

ENTO 8900. Problems in Entomology. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Special problems and topics in entomology.

ENTO 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ENTO 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Environmental Health Science

Jeffrey W. Fisher, *Head*
Phillip L. Williams, *Graduate Coordinator,*
542-0606
(Environmental Health Science Building)

The Department of Environmental Health Science offers three graduate programs: MS in environmental health; MS in toxicology; and PhD in toxicology. The MS degree in environmental health is offered with the opportunity to specialize in environmental protection, industrial hygiene, or public health and may be completed as a terminal degree or as a preparatory step toward a PhD degree. The two toxicology degrees are offered through the University's Interdisciplinary Toxicology Program (see the section in this bulletin entitled, "General Degrees: Interdisciplinary Programs") and students can pursue an emphasis in environmental or mammalian toxicology.

Faculty within the Department of Environmental Health Science have expertise in several fundamental and applied disciplines affording a diverse selection of courses and research programs. Courses in environmental air and water quality, risk assessment, industrial hygiene, toxicology, waste management, environmental epidemiology, and statistics provide in-depth training for employment in commercial concerns, government agencies and academic institutions. Research resources include facilities equipped to handle a wide-range of chemical analyses, toxicological bioassays, air or water quality assessments, microbiological and environmental issues.

Prospective students who desire financial aid may apply for assistance directly to the Department of Environmental Health Science. A limited number of research and teaching assistantships are available through individual faculty members. Other assistantships are available through the Graduate School and application for these should be made through the Environmental Health Science Graduate Coordinator.

EHSC 4080/6080. Environmental Air Quality. 3 hours.
Undergraduate prerequisite: CHEM 2211 and CHEM 2211L.
Sources, control, and modeling of air pollution; effects of air pollutants on human health and the environment; atmospheric chemistry, indoor air quality, and regulatory issues.

EHSC 4100/6100-4100L/6100L. Industrial Hygiene. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CHEM 2211 and CHEM 2211L.
The anticipation, recognition, evaluation, and control of those environmental factors, arising in or from the workplace, which can cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or among community citizens.

EHSC 4150/6150. Solid and Hazardous Waste Management. 3 hours.
Undergraduate prerequisite: CHEM 2211 and CHEM 2211L and MATH 1113 and STAT 2000.
Regulatory, chemical, and engineering aspects of solid and hazardous waste management, including RCRA, CERCLA, landfill and incinerator design, pollutant transport and fate, and potential for human health impacts.

(EHSC)AAEC 4250/6250. Environmental and Public Health Law. 3 hours.
Not open to students with credit in AAEC 4930/6930.
Basic legal principles and procedures as they relate to environmental regulations and public health. Coverage of common law, torts, nuisances, regulatory standards, and state and federal environmental laws. Delineation of significant constitutional and federal regulations that affect managerial decisions.

EHSC(FDST)(MIBO) 4310/6310-4310L/6310L. Environmental Microbiology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MIBO 3500.
Types of microorganisms in the environment; effect of environmental conditions on microbial existence; public health aspects of environmental microbiology; applications of microorganisms to solve environmental problems.

(EHSC)FDST(MIBO) 4320/6320-4320L/6320L. Microbiology of Food Sanitation. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MIBO 3000-3000L or MIBO 3500.
Microorganisms and practices important in food industry sanitation and safety; microorganisms involved and control measures taken to prevent food borne illness, with emphasis on food process operations.

EHSC 4350/6350-4350L/6350L. Environmental Chemistry. 3 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CHEM 2211 and CHEM 2211L and MATH 1113 and STAT 2000.
Chemical principles of environmental processes which result from natural or human-generated phenomena; air, water, and soil chemical reactions involving pollutants and wastes; measurement of pollutants in the environment.

EHSC 4490/6490. Environmental Toxicology. 3 hours.
Undergraduate prerequisite: CHEM 2211 and CHEM 2211L and (BIOL 1104-1104L or BIOL 1108-1108L).
Extent and significance of toxic agents in the environment, and the physical, chemical, and biological processes which determine their behavior, fate, and ultimate effect on human health.

EHSC 4590/6590-4590L/6590L. Water and Wastewater. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CHEM 2211 and CHEM 2211L.
Undergraduate prerequisite or corequisite: MIBO 3000-3000L or MIBO 3500.
Graduate prerequisite or corequisite: Permission of department.
Chemistry and microbial life of water and wastewater, domestic and industrial, with scrutiny of current treatment processes. Sampling methods will be demonstrated. Effects of different types of waste on microbial population of rivers and streams.

EHSC 4610/6610. Water Pollution and Human Health. 3 hours.
Undergraduate prerequisite: EHSC 3060.
Undergraduate prerequisite or corequisite: CHEM 2211 and CHEM 2211L.
Human health issues related to water consumption and use, focusing on water contamination from municipal, industrial, and agricultural practices.

EHSC 4800/6800. Environmental Epidemiology. 3 hours.
Not open to students with credit in MMIB 4800/6800.
Undergraduate prerequisite: Permission of department.
The basics of epidemiology, relying on the Principles of Epidemiology Homestudy Manual from the Centers for Disease Control and Prevention. Utilizing this manual and lecture material, the students will understand how to incorporate epidemiologic tools into handling environmental health related concerns; topical infectious diseases.

EHSC 6010. Proseminar in Environmental Health. 1 hour.
Prerequisite: Permission of department.
Research methods with an emphasis on presentation and instructional techniques.

EHSC 7000. Master's Research. 1-12 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

EHSC 7060. Fundamentals of Environmental Health Science. 3 hours.
Prerequisite: Permission of department and one year undergraduate biology and chemistry.
Fundamentals of environmental health science, including health problems related to contamination of air, water, food, the workplace, and other environments. Environmental control agencies, policies and regulations, and pollution prevention and control strategies are discussed.

EHSC 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

EHSC 8100. Current Topics in Environmental Health Science. 2 hours.
Public health, industrial hygiene, environmental protection, hazardous waste management, and environmental/occupational toxicology.

EHSC(AAEC) 8120. Roles and Responsibilities of Environmental Policy Makers. 2 hours.
Prerequisite: Permission of department.
Roles of science, engineering, law, journalism, economics, grass roots activism, and the legislative and

regulatory process in the development of environmental policy.

EHSC 8150. Environmental Health Seminar. 1 hour.
Prerequisite: Permission of department.
Selected topics in environmental health.

EHSC 8510-8510L. Environmental Risk Assessment and Communication. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: EHSC 4490/6490 or PHRM(VPHY) 6910 or PHRM(VPHY)(POUL)(EHSC) 8930 or permission of department.
Assessment of risks related to environmental exposures; government agency definition and conduct of risk assessments; public communication of environmental exposure risks.

EHSC(ECOL) 8610. Aquatic Toxicology. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L and [EHSC 4490/6490 or PHRM(VPHY) 6910 or PHRM(VPHY)(POUL)(EHSC) 8920].
Toxicological effects of aquatic pollution focusing on fate and transport of xenobiotics; xenobiotic accumulation, dynamics, and toxicity in aquatic organisms; the analysis and modeling of the effects of aquatic pollution on organisms; and the determination of related risks to aquatic ecosystems and human populations.

(EHSC)ECOL 8630-8630L. Quantitative Ecological Toxicology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L and (STAT 4220 or STAT 6220).
Principles and quantitative methods for the analysis of ecotoxicological data.

EHSC 8800. Special Problems in Environmental Health Science. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research or intensive study in a specialized area of environmental health under the direction of a faculty member.

(EHSC)PHRM(POUL)(VPHY) 8930. Chemical Toxicology. 3 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Chemical contamination of air, water, and food by major agricultural and industrial chemicals. Emphasis will be placed on sources of contamination, fate of chemicals in the environment, target species, health effects, chemical analyses, and contamination control.

EHSC 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EHSC 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of a major professor.

Food Science and Technology

Rakesh K. Singh, *Head*
Philip E. Koehler, *Graduate Coordinator,*
542-1099
(Food Science Building)

Programs of study leading to both the Master of Science and Doctor of Philosophy degrees in food science are offered in the various fields of interest in the Division of Food Science and Technology.

Since the application of science and engineering is important in properly selecting, preparing, processing, packaging, distributing and utilizing foods, students selecting this field must be able to delve into problems involving chemistry, microbiology, engineering, and other sciences as well as in the more applied problems concerned with food production, stability, or toxicology. Individuals whose baccalaureate degree is in other fields of science often enter this graduate program because of the important challenges of supplying food to mankind and the opportunities that this field provides to those with advanced degrees. Programs of study are designed for each individual to best utilize his/her prior training and his/her career objectives. The food science and technology division occupies the food science building and the food processing laboratory in the University of Georgia Science Complex on South Campus in Athens and the food science building at the Georgia Agricultural Experiment Station in Griffin. All three buildings are well-equipped with modern instrumentation, pilot plants, and other facilities necessary for graduate research in food processing, food chemistry, food microbiology, food engineering, sensory evaluation, food biotechnology, food toxicology, product development, and nutrient analyses. Faculty in the division are scientists and engineers with expertise in several fundamental and applied disciplines offering a diverse selection of courses and research programs.

FDST 4010/6010-4010L/6010L. Principles and Methods of Food Processing. 4 hours. 2 hours lecture and 6 hours lab per week.
Undergraduate prerequisite: CHEM 2211 and CHEM 2111L and (FDST 2010 or FDST 3000).
Undergraduate prerequisite or corequisite: MIBO 3000-3000L or MIBO 3500.
Principles of food preservation by chilling, freezing, dehydration, fermentation, and thermal processing. Processingmethods to control microbial and enzymatic activity and tominimize chemical and physical deterioration of foods.

FDST(MIBO) 4030/6030-4030L/6030L. Food Microbiology. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: MIBO 3000-3000L or MIBO 3500.
Interactions of microorganisms with food and the implications of these interactions for food preservation, safety, and fermentations. Pathogenic microorganisms associated with food. Analysis of foods for the presence of microorganisms.

FDST 4040/6040-4040L/6040L. Food Chemistry. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite or corequisite: FDST 3000 and FDST 4010/6010.
Chemical, physical, and functional properties of food constituents and ingredients.

FDST 4050/6050-4050L/6050L. Food Engineering Fundamentals. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: PHYS 1111-1111L and MATH 2200 and MATH 2200L.
Undergraduate prerequisite or corequisite: FDST 4010/6010.
Mass and energy balance, fluid flow, heat transfer, and refrigeration in food plant operations. The theory, calculations and design practices, and equipment used in these operations, as well as the physical, chemical, and microbial changes that can occur in foods in processes employing these operations.

FDST 4060/6060-4060L/6060L. Food Engineering Fundamentals. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: FDST 4050/6050-4050L/6050L or permission of department.
Phase equilibria in foods, psychrometrics, water activity, freezing, dehydration, evaporation, membrane separations, extrusion, and process control.

FDST 4070/6070. Nutritional Quality and the Effect of Technology. 3 hours.
Undergraduate prerequisite: FDST 4040/6040-4040L/6040L or BCMB(BIOL)(CHEM) 3100.
The nutritional properties of food and the effects of modern technology on nutritional quality.

FDST 4080/6080-4080L/6080L. Instrumental Methods of Food Analysis. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: (CHEM 2100 and CHEM 2100L) or (CHEM 2211 and CHEM 2211L).
Spectrophotometric, colormetric, chromatographic, and potentiometric methods of analysis as applied to food. Emphasis will be placed upon correlation and interpretation of results.

FDST 4090/6090-4090L/6090L. Food Quality Control. 2 hours. 1 hour lecture and 2 hours lab per week.
Undergraduate prerequisite: [FDST 2010 or FDST 3000] and STAT 2000.
Designing and implementing food quality and process control programs. Monitoring and controlling process specifications and capabilities. Developing food attribute and variable control charts. Examining food sampling plans and verifying HACCP food safety plans.

FDST 4100/6100. Governmental Regulation of Food Safety and Quality. 2 hours.
Role of mandatory and optional food laws and regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness, and nutrition.

FDST 4110/6110-4110L/6110L. Food Packaging. 2 hours. 1 hour lecture and 2 hours lab per week.
Undergraduate prerequisite or corequisite: FDST 3000.
Raw materials, processes, and machinery used in the transportation, storage, and marketing of packaged food products. The relationship between packaging materials, food processing operations, and product quality. Evaluation of chemical and physical properties of food package materials.

FDST(MIBO) 4120/6120-4120L/6120L. Food Fermentations. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: MIBO 3000-3000L or MIBO 3500.
Microbial and technical aspects of dairy, vegetable, meat, grain, and fruit fermentations. Products studied include cheese, sausage, beer, wine, and soy sauce.

FDST 4130/6130. Food Biotechnology. 3 hours.
Undergraduate prerequisite: BCMB(BIOL)(CHEM) 3100 or permission of department.
Recombinant DNA in food and enzyme biotechnology, tissue culture, and microbial transformations. Applications and regulations of biotechnology in the fats and oils industry.

FDST(ADSC) 4140/6140-4140L/6140L. Advanced Meat Science. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: FDST(MIBO) 4030/6030-4030L/6030L and FDST 4040/6040-4040L/6040L.
Meat processing and technology, scientific basis for meat as a food, USDA and FDA regulations governing meat processing, and the latest innovations in commercial meat processing.

FDST 4250/6250-4250L/6250L. New Food Product Development. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: (FDST 4010/6010 and FDST 4040/6040-4040L/6040L) or permission of department.
New food product development, food constituents and functionality, ingredient functions and selection, sensory evaluation/application, dietary guidelines and food regulations affecting product development, new product development project management, protecting innovations, market testing.

(FDST)EHSC(MIBO) 4310/6310-4310L/6310L. Environmental Microbiology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MIBO 3500.
Types of microorganisms in the environment; effect of environmental conditions on microbial existence; public health aspects of environmental microbiology; applications of microorganisms to solve environmental problems.

FDST(EHSC)(MIBO) 4320/6320-4320L/6320L. Microbiology of Food Sanitation. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MIBO 3000-3000L or MIBO 3500.
Microorganisms and practices important in food industry sanitation and safety; microorganisms involved and control measures taken to prevent food borne illness, with emphasis on food process operations.

(FDST)POUL 4860/6860-4860L/6860L. Poultry Processing. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: FDST 3000 or POUL 3600 or permission of department.
Basic principles and methods of processing poultry and eggs. Broiler harvesting, slaughter, evisceration, plant sanitation, microbiology, inspection, grading, regulations, water and waste water handling, quality control and HACCP plans, and further processing.

FDST 5010/7010-5010D/7010D. Food Formulation and Preservation. 3 hours.
Not open to students with credit in FDST 4010/6010.
Food preservation by chilling, freezing, fermentation, canning, and dehydration. Formulation of food products and interactions of food ingredients. Applications of principles to experiments in food science.

(FDST)ADSC 6170-6170L. Experimental Techniques in Meat Science and Muscle Biology. 3 hours. 6 hours lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or STAT 4220 or STAT 6220 or permission of department.
Basic methods in laboratory techniques in meat science. Experiments will familiarize students from a wide variety of backgrounds with a number of laboratory techniques, including lipogenesis, muscle histology, enzyme kinetics, and muscle metabolism.

FDST 6500. Proseminar in Food Science. 1 hour.
Seminar on research methods with an emphasis on presentation and instructional techniques; required of all new Food Science graduate students.

(FDST)ADSC 6890. Advanced Meat Science. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or permission of department.
The theories and methods used in meat science in determination of tissue growth; compositional techniques; muscle protein and lipid organization, structure, and function; biochemical conversion of muscle to meat, and its impact on meat quality and palatability in meat animals.

FDST 7000. Master's Research. 1-10 hours. Repeatable for maximum 40 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under direction of faculty members.

FDST 7020. Integration of Multidisciplinary Topics in Foods. 3 hours.
Role of food processing on physico-chemical and functional properties and safety of foods and ingredients. Course will integrate the multi-disciplinary role of processing methods, control of microbial activity and chemical reactions affecting shelf life, and quality of foods.

FDST 7070. Functional Foods. 3 hours.
Prerequisite or corequisite: FDST 7020 or permission of department.
Biochemistry and physiological effects of functional food components and their roles as beneficial dietary components, sources for innovative foods and regulatory problems.

FDST 7180. Marketing of Value-Added Foods. 3 hours.
Prerequisite: FDST 7020 or permission of department.
Increasing the value to consumers of foods from agricultural commodities into ready-to-eat and/or ready-to-heat-and-eat products. Quantifying the need and translating them into augmented products. Ensuring safety and retaining quality throughout the food distribution chain. Communicating the desirable attributes to all channel members and especially consumers. Concept of holistic hurdles to enhance the user benefits of food products.

FDST 7250. Food Product Development. 3 hours.
Prerequisite: FDST 7020 or permission of department.
New food product development technology. Basics of new product development process; establishment and management of a product development project; techniques used for product development, including team approach method, focus group, optimization, up-scaling, sensory evaluation, shelf life and stability testing, nutritional labeling, and HACCP plan; ingredient technology: function and selection; functionality of food components; innovations protection. The course includes case study and a project paper.

FDST 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

FDST 8010. Food Lipids. 3 hours.
Prerequisite: FDST 4040/6040-4040L/6040L or BCMB(BIOL)(CHEM) 3100 or permission of department.
Structure, composition, preservation, deterioration, analysis, nutritional qualities, functional properties, and biotechnological modification of lipids. Fat substitutes in foods.

FDST 8020-8020L. Flavor Chemistry and Evaluation. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: (STAT 4210 or STAT 6210) and CHEM 2100 and CHEM 2100L.
Sensory methods of evaluating flavor and physical or chemical methods of measuring flavor components; the flavor characteristics of various chemicals, especially as influenced by concentration and interaction with other compounds; flavor formulation; and the stability of flavor substances during processing and storage.

FDST 8030. Seafood Technology. 3 hours.
Prerequisite: (FDST 4010/6010 and FDST 4040/6040-4040L/6040L) or permission of department.
Fishery resources and availability as food, nutritive composition, postharvest biochemical and microbial changes, fishing and handling technology, chilling and freezing, dehydration/smoking/salting, fermentation, canning, minced fish technology, aquaculture, quality and safety evaluation, distribution and marketing.

FDST 8040. Food Colorants. 3 hours.
The chemical, biochemical, and nutritive properties of natural and artificial food colorants. Methods used for their isolation and study are demonstrated.

FDST 8050. Food Toxicology. 3 hours.
Prerequisite: FDST(MIBO) 4030/6030-4030L/6030L.
Principles and problems in evaluating the wholesomeness and safety of foods, food components, and intentional or incidental additives. Consideration of selective toxicity, detoxication mechanisms, structure and biological activity; basic concepts and techniques of safety evaluation, interpretation of biological data.

FDST 8060-8060L. Advanced Food Processes. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FDST 4050-4050L.
The principles and basis for recently developed food processes. Analysis of equipment requirements and cost comparisons with conventional systems. Production of novel foods and ingredients using advanced technology. Plant simulation and optimization of processes.

FDST 8070. Food Proteins and Enzymes. 3 hours.
Prerequisite: FDST 4040/6040-4040L/6040L or BCMB 4010/6010.
Biochemistry of structure and function of proteins and enzymes important in food applications and as food ingredients.

FDST 8080-8080L. Food Texture. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FDST 4040/6040-4040L/6040L and FDST 4050/6050-4050L/6050L.

Food texture and rheology. Viscoelastic models of food systems. Instrumental and sensory methods of analysis. Factors affecting food texture. Texture of specific systems including liquids, gels, emulsions, and solids.

FDST 8090. Advanced Food Microbiology. 3 hours.
Prerequisite: FDST(MIBO) 4030/6030-4030L/6030L.
Physiology and biochemistry of food-borne microorganisms; microbial control in food systems; advanced analytical techniques in food microbiology.

FDST 8100. Food Carbohydrates. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or permission of department.
The classes, structure, composition, properties, reactions, uses in food, biotechnological modification and analysis of carbohydrates.

FDST 8110. Food Research and the Scientific Method. 2 hours.
Prerequisite: Permission of major.
Research as a process that transforms ideas into accessible knowledge. Unit operations include idea generation, problem definition, critical evaluation of literature, method selection, experimental design, data collection, processing and analysis, and knowledge dissemination. Additional aspects include philosophy, grantsmanship, planning, laboratory set-up and management, and career development.

FDST 8120-8120L. Food Structure and Properties. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: FDST 4040/6040-4040L/6040L and FDST 4050/6050-4050L/6050L.
Structural and microstructural aspects of foods. Methods for analyzing food structure. Food polymer and colloid systems. Aspects of structure which determine mechanical, thermal, and dielectric properties of foods.

FDST 8130. Contemporary Issues in Minimally Processed Chilled Foods. 3 hours.
Prerequisite or corequisite: FDST 4010/6010 and FDST(MIBO) 4030/6030-4030L/6030L and FDST 4040/6040-4040L/6040L.
Enumeration of minimally processed products for chilled distribution and factors affecting quality deterioration, including microbiological, enzymatic, biochemical and physical aspects. Minimal processing and refrigeration enhancements are identified, hurdle technologies probed, and questions for future work raised. Critical challenges to safety and quality of this largest and fastest-growing of all food categories are explored.

FDST 8500. Food Science Seminar. 1 hour. Repeatable for maximum 2 hours credit.
Discussion of selected topics in food science.

FDST 8800. Special Problems in Food Science. 1-3 hours. Repeatable for maximum 6 hours credit.
Selected problems associated with food science will be studied to develop greater facility in the application of scientific methods to the solution of problems. The student will work closely with an advisor to plan and complete a research project.

FDST 8900. Topics in Food Science. 1-3 hours. Repeatable for maximum 6 hours credit.
Analysis of emerging issues and developing technologies in Food Science.

FDST 8910. Food Science Internship. 3 hours.
Prerequisite: FDST 6500.
Supervised on-site, hands-on experience in the food industry or in governmental agencies that regulate food.

FDST 9000. Doctoral Research. 1-10 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

FDST 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Horticulture

Douglas A. Bailey, *Head*
Hazel Y. Wetzstein, *Graduate Coordinator,*
542-0777
(Plant Sciences Building)

The Department of Horticulture offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees. Active teaching and research programs are being conducted in ornamental horticulture, floriculture, fruits, vegetables, and nut crops. Students can focus on areas of specialization that include plant breeding, physiology, plant development, biotechnology, postharvest physiology, nutrition, biochemistry, integrated pest management, weed control, water relations, crop production and management, and product utilization. The department has about 40 full-time faculty members located at the Athens, Tifton and Griffin campuses, and various other locations in the state. The facilities available for graduate training include three well-equipped Experiment stations, the State Botanical Garden, and several field research centers that represent the climatic areas of the state. The department has strong interdisciplinary research programs with other departments in the University. Cooperative work is available with three federal research laboratories.

Graduate work in horticulture is designed to develop a high order of independent thought, broad knowledge, and technical skills. The emphasis in graduate work is placed on research, supplemented by courses and seminars.

The program for either graduate degree is planned on an individual basis by the student and his/her advisory committee to complement previous experience and career objectives. Admission status, credit requirements, transfer credits accepted, academic standards, residence requirements, and time limits conform to regulations as given by the Graduate School and the College of Agricultural and Environmental Sciences. Students with strong backgrounds in the biological and/or plant sciences are encouraged to apply. For further information see the horticulture website at http://www.uga.edu/hort.

HORT 4010/6010-4010L/6010L. Olericulture. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: HORT 3010.
Current cultural practice of and environmental influence on vegetable crop production.

HORT 4020/6020-4020L/6020L. Pomology. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: HORT 3020 or permission of department.
Culture and management of orchard crops, including site selection, cultivar and rootstock selection, pruning and training, propagation, integrated pest management, physiology of flowering and fruiting, harvest and postharvest procedures. Laboratory provides hands-on experience pruning, training, and budding trees, and using/calibrating equipment needed for managing orchards.

HORT 4050/6050. Greenhouse Management I. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: (BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L).
Principles and practices of the production of greenhouse pot plants, bedding plants, and cut flowers. Emphasis placed on production practices, environmental and operational management, and cost estimation.

HORT 4060/6060. Greenhouse Management II. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: BIOL 1103-1103L or BTNY 1210-1210L.
Study of commercial greenhouse crop production practices with special emphasis on pot plant production techniques, plant nutrition, fertilizers, and use of growth regulators. Student will be responsible for the culture of a greenhouse crop.

HORT 4070/6070. Special Problems in Horticulture I. 1-5 hours.
Research on special problem under direction of faculty.

HORT 4080/6080. Special Problems in Horticulture II. 1-5 hours.
Advanced research on problem of special interest under direction of faculty.

HORT 4110/6110. Plant Nutrition. 3 hours.
Undergraduate prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L.
Mineral nutrition of higher green plants.

HORT 4210/6210. Postharvest Physiology of Horticultural and Agronomic Crops. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: [(BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L)] and CHEM 1211.
Catabolic and anabolic metabolism, and anatomical and pathological responses of harvested fruits, vegetables, nuts, seeds, cut flowers, and intact plants. Transportation, refrigeration, controlled atmospheric storage, drying, and packaging of harvested products.

HORT 4440/6440-4440L/6440L. Environmental Physiology in Horticulture. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in BTNY 4850/6850-4850L/6850L or BTNY 8890-8890L or CRSS 3300.
Undergraduate prerequisite: (BIOL 1103-1103L and BIOL 1104-1104L) or (BIOL 1107-1107L and BIOL 1108-1108L) or (BTNY 1210-1210L and BTNY 1220-1220L).

Effects of environmental factors on growth and physiology of horticultural plants and modification of the plant's environment to improve crop production.

HORT 4700/6700. Horticultural Practicum. 3 hours.
Undergraduate prerequisite: Permission of department.
Tours and discussion of horticultural enterprises in Georgia. Prepares students for presenting horticultural programs and conducting research to address industry problems.

HORT(CRSS) 4800/6800. Agricultural Biotechnology. 3 hours.
Undergraduate prerequisite: BIOL 1107-1107L and CHEM 1211 and CHEM 1211L.
Structure/manipulation of DNA and inheritance of genes, the current impact of biotechnology on crop production and animal agriculture. Regulatory, intellectual property, environmental, and market issues specific to transgenic crops.

HORT 4890/6890. Biodiversity and the World's Food Crops. 3 hours.
Molecular, organismal, ecological, and sociocultural aspects of biodiversity. Independent research project required.

(HORT)(ANTH)CRSS(ECOL)(GEOG) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Undergraduate prerequisite: Permission of department.
Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

(HORT)(ANTH)CRSS(ECOL)(GEOG) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3-6 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in CRSS(HORT)(ANTH) 4940/6940.
Prerequisite: CRSS(HORT)(ANTH) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.

HORT 7000. Master's Research. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

HORT 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

HORT 8000. Horticultural Seminar. 1 hour. Repeatable for maximum 2 hours credit.
Papers on selected topics to be presented by advanced students, faculty members, and guest speakers.

(HORT)(CRSS)FORS 8070. Plant Biotechnology Research Journal Seminar. 1 hour. Repeatable for maximum 4 hours credit.
Critical review and discussion of current research reports in journals relating to plant biotechnology.

HORT 8080. Horticulture Research. 1-10 hours.
This course is designed for graduate students who wish to carry out advanced research not covered in their thesis topic under the supervision of a faculty member.

HORT 8130. Advanced Plant Nutrition. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: (HORT 4110/6110 and BTNY 3830-3830L) or permission of department.
The principles of plant nutrition, with emphasis on the theories of ion absorption, function of nutrient ions, and nutrient effects on plant composition.

HORT 8150. Growth and Development of Horticultural Crops. 3 hours.
Prerequisite: BTNY 3830-3830L or permission of department.
Growth and development of economic plants. The physiological processes of growth, translocation, growth regulators, juvenility, maturity, senescence. Floral initiation and development of economic plants, with emphasis on the physiological processes of growth, translocation, growth regulators, juvenility, maturity, senescence, floral initiation and development, fruiting, tuber and bulb formation, vernalization, dormancy, rest, and seed germination.

HORT 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 35 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

HORT 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Plant Pathology

John L. Sherwood, *Head*
Charles W. Mims, *Graduate Coordinator,*
542-1291
(Plant Sciences Building)

Plant pathology offers three graduate programs: MS, PhD, and a professional Master of Plant Protection and Pest Management degree (MPPPM). The department has a strong tradition in scholarship and has an international reputation for research on diseases of apples, cotton, cowpeas, peaches, peanuts, pecans, small grains, soybeans, tobacco, and vegetables. Currently, active research and teaching programs are being conducted in all major areas of plant pathology involving many different crops.

The MS and PhD degrees are traditional academic degree programs which demand creative scholarship, technologic skill, and philosophic soundness. These programs emphasize the development of scientists who have the ability to fill positions of leadership in teaching, research, and administration. To achieve such goals of excellence, the student must be highly motivated and must make a commitment to the understanding of plant pathology so that biological principles can be developed and applied. Students may specialize in general plant pathology, mycology, bacteriology, nematology, virology, physiology, genetics, or epidemiology. The MPPPM program is designed to produce graduates with comprehensive, multidisciplinary training in plant pathology, entomology, and agronomy.

Doctoral research skills requirement: one of the three following options, with a decision of which option to require being left to the discretion of the student's advisory committee, (1) statistics, (2) computer science, and (3) reading knowledge of a foreign language.

The Department of Plant Pathology has faculty located in Athens, Tifton and Griffin. All three locations are well equipped with modern instrumentation, greenhouses, and other facilities for graduate research. Land for field studies is located at main and branch experiment stations at several locations throughout Georgia in different climatic regions and major crop growing areas. A Plant Disease Clinic operated by the Extension Plant Pathology Department is used to give students practical training in disease diagnosis and control.

Prospective students who are interested in financial aid should file an application with the department; they will be considered for any Graduate School, College of Agricultural and Environmental Sciences, or department assistantship for which they are eligible.

PATH(BTNY) 4200/6200-4200L/6200L. Introductory Mycology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: (BTNY 1210-1210L and BTNY 1220-1220L) or (BIOL 1103-1103L and BIOL 1104-1104L) or (BIOL 1107-1107L and BIOL 1108-1108L).
Morphology, biology, and taxonomy of fungi. Representatives of all major groups of fungi are considered.

PATH 4280/6280-4280L/6280L. Diagnosis and Management of Plant Diseases. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: PATH 3530-3530L.
Development of fundamental and practical knowledge for identification and management of plant diseases.

PATH 4300/6300. Clinical Plant Pathology. 2 hours. Repeatable for maximum 6 hours credit. 4 hours lab per week.
Not open to students with credit in PATH 8160.
Prerequisite: Permission of department.
Prerequisite or corequisite: PATH 3530-3530L.
Supervised plant disease diagnosis experience within the Extension Plant Pathology Plant Disease Clinics. Students will learn techniques and procedures for diagnosing plant diseases on ornamentals, turf, fruit, vegetables, and field crops. Students will keep a written record of the diseases diagnosed.

PATH(ENTO) 4360/6360. Ornamental Pest Management. 3 hours.
Prerequisite or corequisite: PATH 3530-3530L.
Corequisite: ENTO 4000/6000-4000L/6000L.
Introduction to pest management on ornamental crops grown in greenhouses and nurseries, with emphasis on insects and diseases. Emphasis on production practices and their influence on pest population development. Scouting, integrated pest management, chemical pesticides, and pest identification will be covered.

(PATH)(CRSS)ENTO 4740/6740-4740L/6740L. Integrated Pest Management. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ENTO 3740-3740L or PATH 3530-3530L or CRSS 4340/6340.

The utilization and integration of pest control tactics (cultural methods, biological control, pesticides, host resistance) for management of insects, pathogens, and weeds. The major methodologies for controlling pests are discussed individually and within the context of profitable production of selected commodities followed by discussion of multiple pest management using integrated control techniques.

PATH 6130. Internship in Plant Protection and Pest Management. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Students will be involved and become familiar with the applied aspects of plant protection and pest management.

PATH 6250-6250L. Plant Nematology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: PATH 3530-3530L.
Morphology and biology of plant parasitic nematodes. An introduction to nematology, with an emphasis on nematode morphology, nematode disease of plants, and nematode management.

PATH 6290-6290L. Plant Pathogenic Bacteria. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: PATH 3530-3530L or MIBO 3500.
Isolation, identification, inoculation, biology, and control of plant pathogenic bacteria.

PATH 6350-6350L. Plant Virology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: PATH 3530-3530L and BTNY(CRSS)(BIOL) 4500/6500.
Nature of plant viruses, replication and gene expression, movement and host range, purification, serology, control, and resistance.

PATH 7000. Master's Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

PATH 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

PATH 8000. Field Plant Pathology. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: PATH 3530-3530L.
Four day long field trip to various parts of the state to see and collect examples of plant diseases in the field on economically important crops in Georgia.

PATH 8150. Plant Pathology Graduate Seminar. 1 hour. Repeatable for maximum 3 hours credit.
Presentation of thesis and dissertation results and discussion of papers and research topics in plant pathology.

PATH 8160. Special Topics in Plant Pathology. 1-3 hours. Repeatable for maximum 6 hours credit.
Advanced topics of current interest and importance in plant pathology.

PATH 8200. Applied Mycology. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: PATH(BTNY) 4200/6200-4200L/6200L.
Fungi collected from various sources in nature will be brought into the laboratory for culture and/or preservation and subsequent identification using current taxonomic literature.

PATH(BTNY) 8210-8210L. Biology of Ascomycetes. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: PATH(BTNY) 4200/6200-4200L/6200L.
Comparative morphology of ascomycetes and their asexual stages; principles of taxonomy and training in identification.

PATH 8310-8310L. Epidemiology of Plant Diseases. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: PATH 3530-3530L.
Factors altering the course of disease epidemics in plant populations. Techniques for qualitative and quantitative measures of such factors will be emphasized.

(PATH)BTNY 8320-8320L. Zoosporic Fungi and Slime Molds. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: PATH(BTNY) 4200/6200-4200L/6200L.
Comparative biology of zoosporic fungi and slime molds as organisms. Topics include current research in morphology and development, phylogeny, physiology, ecology and the use of selected organisms as model systems. Laboratory will emphasize isolation and cultivation of these organisms and demonstration of their reproductive stages.

(PATH)BTNY 8340-8340L. Experimental Mycology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: PATH(BTNY) 4200/6200-4200L/6200L.
Fungal biology and ecology and the use of fungi as experimental organisms in the study of development and molecular biology and genetics.

PATH 8400. Host-Pathogen Interactions. 3 hours.
Prerequisite: [PATH 3530-3530L and (BCMB 6000 or BTNY(CRSS)(BIOL) 4500/6500)] or permission of department.

Principles of physiology and genetics of parasitism and disease resistance. Emphasis is placed upon how the genetic basis for host-pathogen compatibility and incompatibility is related to structural, physiological, and biochemical responses in diseased plants and to mechanisms of resistance.

PATH 8410. Advanced Plant Disease Management. 3 hours.
Prerequisite: PATH 3530-3530L.
Chemical controls and application methods, biological control and ecology of plant pathogens, host resistance, cultural practices, pesticide resistance, disease forecasting and other decision aids, integrated disease management, and economic aspects of disease management.

(PATH)(BCMB)BTNY(GENE) 8960. Genetics of Yeast and Filamentous Fungi. 3 hours.
Prerequisite: Permission of department.
Classical genetics and molecular biology of budding yeast, fission yeast, and model filamentous fungi. Includes life cycle, cell cycle, cytoskeleton, mating types, morphogenesis, pathogenesis, mutant screens, and cloning strategies.

PATH 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

PATH 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Poultry Science

Michael P. Lacy, *Head*
Daniel Fletcher, *Graduate Coordinator,*
542-2476
(Livestock-Poultry Building)

The Department of Poultry Science offers excellent opportunities for graduate study for qualified students with degrees in biology, chemistry, economics and poultry science. Graduate programs leading to the MS and PhD degrees are offered in the fields of poultry products, nutrition, microbiology, molecular biology, mycotoxicology, genetics, physiology, management, and parasitology. Facilities for graduate training include laboratories with the latest equipment for studies in cellular and molecular biology, enzymology, lipid and mineral metabolism, environmental and reproductive physiology, physiological and population genetics and in avian diseases and parasites.

Equipment is available for electrophoretic and chromatographic separation, fractionation procedures, and use of radioactive isotopes, including a whole body counter. Specialized equipment includes liquid scintillation detectors, spectrometers, cell culture incubators, ultracentrifuge, fluorescence microscopy, thermocyclers, amino acid analyzer, gas-liquid chromatograph, high pressure chromatographs, and numerous other modern instruments.

Excellent experimental poultry facilities are also available for studies, where large numbers of birds are required for research in the various areas of specialization in the graduate program, including a controlled temperature house for work in environmental physiology, and a sophisticated poultry processing facility.

Superior students are encouraged to apply for graduate assistantships and fellowships which are available through the department.

The 8000 numbered courses in nutrition are listed in the offerings of animal nutrition.

For a description of the MS and PhD interdisciplinary program in toxicology, see the section in this bulletin entitled, "General Degrees: Interdisciplinary Program."

POUL 4050/6050. Advanced Poultry Breeding. 3 hours.
Undergraduate prerequisite: POUL 3720.
The development of practical poultry breeding programs. The mode of inheritance and relative heritability of various characteristics of economic importance and criteria for effective selection toward their improvement.

POUL 4060/6060-4060L/6060L. Physiology of Avian Reproduction. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Lectures emphasize the reproductive physiology of poultry and integrate this information into management programs directed toward maximizing reproductive efficiency. Laboratories will emphasize the acquisition of skills and techniques in reproductive management, including the collection, preservation,

and evaluation of semen, fertility evaluation, and proper incubation practices.

POUL 4330/6330. Basic Mycotoxicology. 3 hours.
Undergraduate prerequisite: BIOL 1108-1108L and CHEM 2100 and CHEM 2100L.
Various mycotoxins which occur in feedstuffs as they relate to agricultural production. Fungal producers, chemical and physical properties of the toxins, prevalence and distribution in nature, biological effects and mode(s) of action, and means of control.

(POUL)(ADSC)ANNU 4370/6370. Monogastric Nutrition. 3 hours.
Undergraduate prerequisite: [ADSC 3300-3300L or POUL 3750] and BCMB(BIOL)(CHEM) 3100.
Comparative nutrition of monogastric animals, with special but not exclusive, consideration of poultry and swine.

POUL(FDST) 4860/6860-4860L/6860L. Poultry Processing. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: FDST 3000 or POUL 3600 or permission of department.
Basic principles and methods of processing poultry and eggs. Broiler harvesting, slaughter, evisceration, plant sanitation, microbiology, inspection, grading, regulations, water and waste water handling, quality control and HACCP plans, and further processing.

POUL 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

POUL 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

POUL 8010-8010L. Avian Physiology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
The physiology of all organ systems of birds other than the reproductive system. In-depth study of avian systems will be done using current scientific literature and review articles as source material.

POUL 8100. Poultry Science Seminar. 1 hour. Repeatable for maximum 3 hours credit. 1 hour lab per week.
Prerequisite: Permission of department.
Reading, reports, and discussions of problems related to the field of poultry.

POUL 8120. Scientific Writing and Literature Retrieval. 3 hours.
Prerequisite: Permission of department.
Scientific writing and literature retrieval techniques in the life sciences. Library resources and their use through manual and automated retrieval systems and on practical aspects of oral and written communications of scientific information.

POUL 8150. Poultry Nutrition with Application to Avian Medicine. 1 hour.
Prerequisite: POUL 3750 or ADSC 3300-3300L.
The practical aspects of poultry nutrition and the relationship of nutritional programs in poultry production to disease problems.

POUL 8510. Problems in Poultry Science. 1-9 hours.
Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Selected problems in the specialized areas of poultry nutrition, genetics, physiology, poultry products technology, pathology, parasitology, and management.

(POUL)CBIO(PARA) 8560. Seminar in Parasitology. 1 hour. Repeatable for maximum 3 hours credit. 1 hour lab per week.
Weekly discussion of parasitological topics.

POUL 8570. Quantitative Genetics and Breeding. 3 hours.
Prerequisite: ADSC 3110 or POUL 3720 or STAT 4220 or STAT 6220 or permission of department.
Population genetics theory associated with animal and poultry populations and their quantitative genetic improvement. The mode of inheritance and heritability of various traits of economic importance and criteria for effective selection toward economic improvement of animal and poultry stocks.

POUL 8590. Breeding Strategies in Poultry. 3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: POUL 8570 or permission of department.
Strategies employed for breeding major and minor poultry species in commercial operations, and problems dealing with breeding for changing markets and changing environmental conditions.

(POUL)PHRM(VPHY) 8920. Organ Systems Toxicology II. 3 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Mechanisms of injury of biological systems produced by chemical exposure. Adverse effects of chemicals on major bodily organs and organ systems including the liver, carcinogenesis/mutagenesis, immune system, reproductive system, skin, and eyes.

(POUL)(EHSC)PHRM(VPHY) 8930. Chemical Toxicology. 3 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Chemical contamination of air, water, and food by major agricultural and industrial chemicals. Emphasis will be placed on sources of contamination, fate of chemicals in the environment, target species, health effects, chemical analyses, and contamination control.

POUL 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PermissioThe Franklin College of Arts and Sciences

POUL 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

The Franklin College of Arts and Sciences

Wyatt W. Anderson, Dean
(New College)

The Franklin College of Arts and Sciences, the oldest of the schools and colleges which make up the University of Georgia, offers masters and doctoral degrees in more than forty disciplines or areas of study within the humanities, fine arts, social sciences, and natural sciences. The degree offerings include Master of Arts, Master of Science, Master of Applied Mathematical Science, Master of Arts for Teachers, Master of Fine Arts, Master of Music, Master of Public Administration, Doctor of Musical Arts, Doctor of Public Administration, and Doctor of Philosophy. Additionally, graduate certificates are available in conservation ecology and sustainable development, environmental ethics, geographic information science, global policy studies, and women's studies.

Applications must be submitted to the Office of Graduate Admissions for these programs, but students should also seek information regarding entrance requirements, faculty research specialties within departments or programs, and graduate assistantships from the graduate coordinator(s) of any program(s) in which they have interest. The names of the department heads and graduate coordinators, course offerings and additional information are also found in this bulletin.

African American Studies

R. Baxter Miller, *Director*
Institute for African American Studies,
542-5197
(Psychology Building)

The Institute currently arranges for collaborative graduate work with the departments of adult education, comparative literature, drama, English, history, political science, psychology, Romance languages, and sociology. Please consult any joint listings in the areas. Flexibly coherent programs should demonstrate disciplinary rigor along with brave new inquiries into fresh methods of scholarly integration. The Institute works especially to facilitate and authorize interdisciplinary options for diverse African Americanists of all kinds.

AFAM)HIST 4055/6055. Historical Survey of African American Thought. 3 hours.
This course examines representative works of such nineteenth- and twentieth-century social, cultural, and political thinkers as Frederick Douglass, Cornel West, Anna J. Cooper, and Angela Davis among other outstanding women and men who have contributed significantly to the intellectual life of the African American community.

(AFAM)RELI 4201/6201. African American Religious History. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The religious traditions of African Americans from Colonial times to the present; major religious movements, personalities, and ideas and their relationship to various aspects of American culture.

(AFAM)RELI 4202/6202. Southern Religious History. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The origins, growth, and current practices of religion in the American South. The interaction between religion and other aspects of Southern culture, such as racial and gender concerns, education, Darwinian science, temperance, and politics.

(AFAM)RELI 4203/6203. The Bible in the Black Church. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Biblical interpretation in black America from 1865 to the present.

AFAM(DRAM) 4490/6490. African American Women in Cinema: Image and Aesthetics. 3 hours.
Undergraduate prerequisite: Permission of department.
Selected films by and about African and African American women. A historical/critical overview of the presentation of these women in cinema with emphasis on

contemporary African and African American women film makers.

AFAM(PSYC) 4500/6500. Psychology of Prejudice. 3 hours.
Undergraduate prerequisite: (PSYC 1101 or SOCI 1101) and senior standing.
Motivational, cognitive, social, and cultural factors that lead to discrimination in our society and various perspectives found in the research on discrimination.

AFAM(PSYC) 4550/6550. Classic Studies in Black Psychology. 3 hours.
Undergraduate prerequisite: AFAM(PSYC) 3150 or permission of department.
Studies which have had major social or scientific impact on the lives of Black Americans and the way black people have been viewed within psychology. Approach is historical and interdisciplinary.

(AFAM)SPCM 4830/6830. African American Relational Communication. 3 hours.
Undergraduate prerequisite or corequisite: SPCM 1500 or SPCM 3700 or AFAM 2000 or PSYC(AFAM) 2150 or AFAM(PSYC) 3150.
Interpersonal communication within African American relationships from a holistic framework. Historical, sociological, and psychological factors that affect individual behaviors within these relationships, including gender socialization from Africa to America.

(AFAM)SPCM 4840/6840. African American Family Communication. 3 hours.
Undergraduate prerequisite or corequisite: SPCM 3700 or AFAM 2000 or PSYC(AFAM) 2150 or AFAM(PSYC) 3150.
This course provides students with an opportunity to examine communication within the African American family from an African-centered perspective. It requires students to read and critically examine various theoretical and methodological approaches to the African American family.

AFAM(ROML) 4860/6860. Topics in Afro-Hispanic Identity. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Representations of Africa and African American culture in Hispanic Literature by writers of African descent. By covering a variety of genres, the course will provide discussion about a cultural identity that is constantly in dialogue with dominant discourses. The course will incorporate critical texts.

(AFAM)ENGL(LING) 6040. Language Use in the African American Community. 3 hours.
Prerequisite: Permission of department.
History and structure of the speech and language styles used in the African American community; examination of linguistic and cultural issues that confront the majority of African Americans; the role of the vernacular language of African Americans in society.

(AFAM)SOCI 6370. Sociology of Race and Ethnicity. 3 hours.
The relationships of racial and ethnic groups with each other and with social institutions and processes.

(AFAM)ENGL 6770. Topics in African American Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Selected topics in African American literature, such as autobiography, the Harlem Renaissance, Gwendolyn Brooks and Richard Wright, Black American literature and aesthetics.

(AFAM)ENGL 8720. Seminar in African American Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A detailed examination of selected forms and ideas in the African American tradition.

AFAM 8960. Directed Reading in African American Studies. 3-9 hours. Repeatable for maximum 9 hours credit.
Independent directed reading course for graduate students whose programs of study require courses not available in the regular schedule. It makes the interdisciplinary study of African American culture and theory accessible to students who in traditional departments need to ground their inquiry in a broader context.

Anthropology

Michael D. Olien, *Acting Head*
Ben Blount, *Graduate Coordinator,* 542-1483
(Baldwin Hall)

The Department of Anthropology offers programs leading to the degrees of Master of Arts and Doctor of Philosophy in anthropology. These graduate programs reflect training in basic anthropological knowledge and the department's focus on environmental and ecological anthropology.

Admission is only to the PhD program. Students may complete the requirements for an MA degree en route to the PhD or as the terminal degree in their program. Students are admitted and begin the PhD program only during Fall semester. No new admissions are permitted in the Spring semester.

Training focuses on the role of anthropology as a discipline in understanding the human-environment interface, both past and present, and from a cross-cultural perspective. The doctoral program also provides students with the flexibility to attain interdisciplinary training in other academic areas relevant to understanding issues of sustainable human ecosystems. Relevant academic areas for coursework within the university can be found in the Institute of Ecology, the Environmental Ethics Program, the College of Agricultural and Environmental Sciences, the School of Forest Resources, and allied disciplines in the College of Arts and Sciences. Graduates of the program should be qualified for teaching, research, or applied employment opportunities. Requirements for the PhD degree include satisfactory performance on written and oral comprehensive examinations, fulfillment of a research skills requirement, and an approved dissertation which reflects the student's specialization and the departmental focus.

Prospective students must complete the application process by January 14.

(Please contact the graduate coordinator for current course offerings.)

ANTH 4020/6020. Indians of North America. 3 hours.
North American Indian cultures at the time of European contact. Additional topics include origin and development of Indian culture, impact of European contact on native cultures, and problems faced by Native Americans today.

ANTH 4030/6030-4030D/6030D. Evolution of Human Cognition. 3 hours.
Undergraduate prerequisite or corequisite: ANTH 1102 or PSYC 1101 or EPSY(PSYC)(ARTI)3020.
Graduate prerequisite or corequisite: Permission of department.
Examination of the biological evolution of human cognition (consciousness, cognition, and ultimately language), drawing on recent findings in neurobiology, cognitive science, linguistics, paleoanthropology, primatology, cognitive anthropology, cognitive ethology ("mental experience of animals"), cognitive and development psychology, psycholinguistics, evolutionary psychology, and the philosophy of mind/brain.

ANTH 4040/6040. Visual Anthropology. 3 hours.
Undergraduate prerequisite: ANTH 1102 or permission of major.
Anthropological uses of film, video, and photographs in field research and in the presentation of research results, especially in relation to portrayal of indigenous people.

ANTH 4050/6050. Cultural Anthropology. 3 hours.
Undergraduate prerequisite: ANTH 1102 or permission of major.
The analysis and cross-cultural comparison of human institutions.

ANTH 4070/6070. Cultural Ecology. 3 hours.
Undergraduate prerequisite: ANTH 1102 or permission of department.
The influence of the environment on human behavior and analysis of common adaptive responses among human populations to particular environments, emphasizing the role of culture in the ecological process.

ANTH(LING) 4090/6090. Cognitive Anthropology. 3 hours.
Undergraduate prerequisite: ANTH 1102 or permission of major.
Folk systems of knowledge, with an emphasis on how people in different societies culturally identify, define, label, and classify phenomena such as color terms, plants, animals, and other environmental resources.

ANTH 4200/6200. Field Methods in Archaeology. 3-6 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: Permission of major.
Undergraduate corequisite: ANTH 4240/6240.
Archaeological reconnaissance, survey, excavation, laboratory preparation and analysis of collected materials.

ANTH(ECOL) 4210/6210. Zooarchaeology. 4 hours.
3 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Animal remains recovered from archaeological sites, studied in light of zoological and archaeological methods and theories and interpreted in terms of human and animal behavior.

ANTH 4240/6240. Laboratory Methods in Archaeology. 3-6 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: Permission of major.
Undergraduate corequisite: ANTH 4200/6200.
Environmental, chronological, preservational, and analytical methods and techniques of archaeological research.

ANTH(BIOL)(BTNY)(ECOL)(ENTO) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: Permission of department.
Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

(ANTH)FORS(RLST) 4271/6271. Field Studies in Natural Resources. 1-9 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Field studies to explore the management and conservation of natural resources with a focus on issues related to forestry, wildlife, ecology, recreation and tourism, geology, and/or coastal/water resources. The impact of humans on these resources will also be emphasized.

ANTH(ECOL) 4290/6290. Environmental Archaeology. 3 hours.
Survey of theories and methods used to study the relationship between humans and their environment. Emphasis is on subsistence strategies and environmental reconstructions based on archaeological evidence and the techniques of zooarchaeology, paleobotany, and paleonutrition.

ANTH(BTNY) 4300/6300-4300L/6300L. Ethnobotany. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ANTH 1102 or permission of major.
Ethnobotanical research, with focus on knowledge and utilization of the plant world in traditional societies. Comparisons of societies in tropical forest ecosystems and evaluation of issues relating to intellectual property rights and traditional peoples' knowledge of plant species with potential economic value.

ANTH 4310/6310. Archaeology of Eastern North America. 3 hours.
Undergraduate prerequisite: ANTH 3220 or permission of major.
Prehistoric and early historic aboriginal cultural variation in Eastern North America.

(ANTH)GEOL 4340/6340. Archaeometry. 3 hours.
Undergraduate prerequisite: GEOL(ANTH) 4700/6700.
Undergraduate prerequisite or corequisite: GEOL 1121 or GEOL 1121H or GEOL 1122 or GEOL 2350H or ANTH 3220 or ANTH 3250 or ANTH(ECOL) 4210/6210 or CLAS(ANTH) 2000.
Methods of archaeometric analysis including chronometric and instrumental techniques. Absolute age dating and characterization of archaeological materials by physico-chemical analysis.

ANTH 4460/6460. The Aztecs and the Maya. 3 hours.
Not open to students with credit in ANTH 3260.
Two indigenous urban societies of the Americas, from farming village beginnings to the Spanish conquest, and their lasting impact on modern middle American culture. Topics include ecology, economy, political organization, urbanism, militarism, beliefs, art, architecture, and literature.

ANTH(HIST) 4470/6470. The Rise and Fall of the Southeastern Chiefdoms. 3 hours.
Development of the native societies of the southeastern United States, the exploration of the area by Spain in the sixteenth century, and the consequences of the meeting of the two peoples.

ANTH(HIST) 4480/6480. The Indians of the Old South. 3 hours.
Social history of the native peoples of the southern United States from the beginnings of the Spanish missions and the English deerskin and slave trade through Indian removal.

ANTH 4540/6540-4540L/6540L. Environment and Health. 3 hours. 2 hours lecture and 2 hours lab per week.
Bio-cultural medical anthropology focusing on the interaction among environment, biology, culture, and society as determinants of health and health problems.

ANTH 4550/6550. Ethnohistory. 3 hours.
Undergraduate prerequisite: ANTH 1102 or permission of major.
The methods used by anthropologists to reconstruct the history of preliterate societies from archaeological evidence, documentary evidence, and oral traditions. The ethnohistory of southeastern United States.

ANTH 4560/6560. Anthropology of Development. 3 hours.
Undergraduate prerequisite: ANTH 1102 or permission of major.
Relationships among development, culture and environment from the world system perspective. Concepts of dependence, hegemony, inequality, and resistance are brought to bear in exploring interlinkages between (and among) underdevelopment, resource exploitation, and local autonomy and self-reliance.

ANTH 4570/6570. Maritime Anthropology. 3 hours.
Undergraduate prerequisite: ANTH 1102 or permission of major.

Coastal and marine regions of the world in terms of human occupation, resource utilization, social organization, and human-environmental relationships. Identification of issues in traditional and contemporary management of coastal and marine ecosystems.

ANTH 4580/6580-4580L/6580L. Ecology of Food, Diet, and Nutrition. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ANTH 1102 or permission of major.
The impact of cultural behavior on the acquisition, preparation, and consumption of potentially edible natural resources.

ANTH 4590/6590. Ecology and Evolution of Human Disease. 3 hours.
Undergraduate prerequisite: ANTH 1102 or BIOL 1104 or BIOL 1108-1108L.
Graduate prerequisite: Permission of Major.
Ecological, evolutionary, and biocultural aspects of human disease. Subjects include the ecology of infectious/parasitic disease pathogens and their human hosts, the evolution of human host-pathogen interactions, the impact of cultural and demographic change in human populations, and the effects of global environmental change on human disease patterns.

ANTH 4630/6630. Field Methods. 3-6 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: ANTH 1102 or permission of major.
Ethnographic research methods and techniques including interviews, surveys, participant-observation, questionnaires, and dealing with human subjects. Supervised research practicing these skills in a field setting.

(ANTH)RELI 4640/6640. Anthropology of Religion. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Anthropological approaches to the world's major religions as they relate to complex societies.

(ANTH)GEOL 4700/6700. Archaeological Geology. 3 hours.
Archaeological geology examines the use of earth science methods and theories in the study of archaeological sites and their contents. The four major areas covered include: (1) the archaeological site and geology; (2) age determination techniques; (3) exploration techniques; (4) artifact characterization.

ANTH 4710/6710-4710L/6710L. Human Origins. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ANTH 1102 and permission of major.
The evolutionary history of the human species through examination of the fossil record. The fossil record is introduced using precision casts of fossil specimens. Scientific methods are developed by rediscovering major findings. The influence of changing interpretations on the culture of science is demonstrated.

ANTH 4740/6740. Primate Ecology. 3 hours.
Not open to students with credit in PSYC 5770/7770.
Undergraduate prerequisite: ANTH 1102 or permission of department.
Nonhuman primates in their natural habitats, including biogeography, feeding and ranging behavior, structure and social organization of groups in relation to environment, and primates as members of communities. Specific consideration of conservation issues, especially confrontation with human populations related to land use and development

ANTH 4745/6745. Cross-cultural Human Development. 3 hours.
Undergraduate prerequisite: ANTH 1102.
Cross-cultural and comparative approaches to understanding how humans develop socially, psychologically, and physically across the entire lifespan.

ANTH 4790/6790. Human Adaptation. 3 hours.
Undergraduate prerequisite: ANTH 1102 and permission of major.
Graduate prerequisite: Permission of major.
Human diversity as response to environmental stress, from both a biological and cultural perspective. Topics include adaptation to heat, cold, altitude, malnutrition, and infectious disease; the impact of westernization and technological advancement on human biological function; and growth and development of the individual under environmental stress.

ANTH 4800/6800. Anthropological Approaches to Human Sexuality. 3 hours.
Survey of contemporary understanding of human sexual behavior from diverse anthropological perspectives, including ethnography, primatology, and evolutionary biology.

(ANTH)LING 4860/6860. Sociolinguistics. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL (LING) 3030 or ANTH(LING) 3080 or permission of department.
The study of language as a cultural and social phenomenon. Topics include language and meaning, language and world view, language and social behavior, and language and social issues.

ANTH 4900/6900. Special Topics in Anthropology. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: ANTH 1102 or permission of major.
Current topics in anthropology.

(ANTH)CRSS(ECOL)(GEOG)(HORT) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Undergraduate prerequisite: Permission of department.
Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

(ANTH)CRSS(ECOL)(GEOG)(HORT) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3-6 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in CRSS(HORT)(ANTH) 4940/6940.
Prerequisite: CRSS(HORT)(ANTH) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.

(ANTH)(FORS)RLST 5400/7400-5400L/7400L. Parks and Ecotourism Management. 3 hours. 2 hours lecture and 2 hours lab per week.
An introduction to the sustainable planning, development, and management of parks, protected areas and ecotourism, worldwide. Classroom lectures will be combined with a field trip, guest speakers, and a group case study to examine six key components of sustainable protected areas and ecotourism management.

(ANTH)ECOL(FORS) 6140. Principles of Conservation Ecology and Sustainable Development II. 3 hours.
Prerequisite: ECOL 6080.
Social science dimensions of conservation and sustainable development; social, economic, and political considerations in managing natural resources; policy-level aspects to project implementation.

(ANTH)SOCI 6450. Sociopolitical Ecology. 3 hours.
The relationship between humans and the environment; ecological and social theories about environmental policies and problems.

ANTH 6490. Foundations of Ecological Anthropology. 3 hours.
Prerequisite: Permission of major.
Human-environment interaction in anthropological perspective from the eighteenth century to the present.

ANTH 6520. History of Anthropological Theory. 3 hours.
Prerequisite: Permission of major.
The development of anthropological theory.

ANTH 6600. Microcomputers for Anthropological Research. 1 hour.
Prerequisite: Permission of major.
Microcomputer hardware and software packages for anthropological research. These include word processing, data management programs, and packages designed specifically for anthropology.

ANTH 6610. Introduction to Research Methods. 3 hours.
Prerequisite: Permission of major.
Central issues, underlying assumptions, and basic premises of anthropology. Course provides the requisite skills and knowledge for designing an original research project in anthropology.

ANTH 6620. Methods in Sociocultural Anthropology. 3 hours.
Prerequisite: Permission of major.
Research methods and techniques used in sociocultural anthropology, with emphasis on ethnographic field research, including observation, participant observation, interviewing, questionnaires, testing, and mapping. Methods of data organization, storage, retrieval, and preliminary analyses.

ANTH 6920. Advanced Archaeology. 3 hours.
Prerequisite: Permission of major.
Fundamental issues in modern archaeology.

ANTH 6950. Advanced Cultural Anthropology. 3 hours.
Prerequisite: Permission of major.
Cultural and social anthropology.

ANTH 6980. Advanced Biological Anthropology. 3 hours.
Prerequisite: Permission of major.
Current trends in bioanthropology.

ANTH 7000. Master's Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of major.
Research while enrolled for a master's degree under the direction of faculty members.

(ANTH)EFND 7150. Anthropology of Education. 3 hours.
Cultural aspects of educational processes, institutions, and issues in societies around the world organized around comparative analysis. Topics include education as cultural process and social function, as sociocultural structure, as cultural transaction, and as cultural product.

ANTH 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of major.

Thesis writing under the direction of the major professor.

ANTH 8000. Special Topics in Anthropology. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of major.
Intensive study on an individual basis in the field of the graduate student's major interest.

ANTH 8040. Seminar in Anthropology. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of major.
Selected topics in Anthropology.

ANTH 8060. Primate and Human Ecology. 3 hours.
Prerequisite: Permission of major.
Interrelationships among biology, social organization, cultural diversity, and the physical environment. Emphasis is placed on the ecology of human and primate societies that affect and constrain biocultural adaptation.

(ANTH)ECOL 8110. Tropical Ecological and Cultural Systems. 2 hours.
Prerequisite: ECOL(FORS)(ANTH) 6140.
Characteristics of tropical ecosystems, tropical biological communities, and human cultures in the tropics; how they differ from those in the temperate zone, and the implications for conservation and development.

ANTH 8200. Seminar in Archaeology. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of major.
Areas of special interest in the field of archaeology. Topics to be selected according to need.

(ANTH)MARS 8210. Topics in Coastal Marine Policy. 3 hours.
Prerequisite: ECOL(BIOL) 3500-3500L or permission of department.
Coastal marine policy approached from scientific, legal, and anthropological perspectives. This interdisciplinary course provides a general background in coastal policy, and uses a case study approach to examine current topics in marine resource management. Topics include: coastal zone management, coastal groundwater supply, coastal fisheries, development in the coastal zone.

ANTH 8400. Human Population Ecology. 3 hours.
Prerequisite: ANTH 6490 or permission of department.
Theoretical population ecology applied to human populations. Biocultural aspects and multiplicity of causality in discussion/assessment of topics such as: human demography and population regulation; disease ecology and epidemiology in human populations; interrelationships of human nutrition, social inequity, resource exploitation, and population mobility/migration/spatial organization.

ANTH 8410. Comparative Human Ecological Systems. 3 hours.
Prerequisite: ANTH 6490 or permission of department.
Critical examination of concepts relevant to an ecological analysis of the formation, maintenance, and change of human social groups, considering in turn cultural, biocultural, structural, and neo-Marxist perspectives.

ANTH 8420. Human Ecosystem Evolution. 3 hours.
Prerequisite: ANTH 6490 or permission of major.
Evolutionary perspectives on the cultural and biocultural mediation of human-environment relations from the Plio-Pleistocene to the recent past, analyzed in terms of human ecosystem structures and functions, including cybernetics and flows of energy/matter and information; persistence and change as evolutionary and ecological concepts.

ANTH 8500. Seminar in Ecological Anthropology. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: ANTH 6490 or permission of major.
Topics in human environmental and ecological systems, including factors that contribute to emergence and maintenance of those systems.

ANTH 8510. Human Behavior. 3 hours.
Seminar exploring evolutionary approaches to human behavior.

ANTH 8570. Economic Development and Health. 3 hours.
Prerequisite: Permission of major.
Interrelationship of development and medical pluralism on international health from the colonial era to the present.

ANTH 8580. Anthropological Research Ethics. 3 hours.
Prerequisite: Permission of department.
Topics on major ethical issues involved in conducting research in the new century as this research relates to human rights and the emerging field of humanitarian law. Special attention on intellectual property and traditional ecological knowledge and practical realities of implementing the 1992 Convention on Biodiversity.

ANTH 8590. Ecology of Health Research. 3 hours.
Prerequisite: Permission of major.
Anthropological contributions to understanding health and disease within a human ecological framework.

ANTH 8610. Field Methods in Ecological Anthropology. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of major.
Methods of anthropological research in field settings on environmental and ecological questions and problems, including ethnography, surveys, and formal measurement of resources.

ANTH 8620. Anthropological Data Analysis. 3 hours.
Prerequisite: ANTH 6610.
Procedures and techniques of analysis on anthropological data, including microcomputer software data analysis packages, with focus on issues in qualitative research, including text analysis, pattern recognition, matrix displays, and data graphics, and on issues in quantitative research, including hypothesis and model testing.

ANTH 8630. Anthropological Research Design and Proposal Development. 3 hours.
Prerequisite: Permission of department.
Finding and formulating an anthropological research idea and translating it into a convincing plan for research. Students will develop their own research ideas, discuss evolving research designs in class each week, and prepare an effective proposal.

ANTH(LING) 8880. Field Methods in Linguistics. 3 hours.
Prerequisite: Permission of major.
The techniques of recording and analyzing a foreign language by working directly with a native speaker.

ANTH 9000. Doctoral Research. 1-3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ANTH 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Art

Carmon Colangelo, *Director*
Andy Nasisse, *Graduate Coordinator,*
542-1624
(Visual Arts Building)

The Lamar Dodd School of Art offers programs for the Doctor of Philosophy in art, Master of Fine Arts, and Master of Art in art history, all organized to develop the student's creative independence and professional capability as a producing artist, designer, and scholar in a total environment of living art. In conjunction with the College of Education, the School of Art offers programs in art education leading to the Master of Art Education, Specialist in Education, and Doctor of Education degrees. The school's philosophy particularly stresses that the above goals be met for the art educator who must attain professional standards in the graduate studio as well as in the classroom.

Candidates for the PhD in art are required to demonstrate competence in either history of art or art education. When appropriate, a candidate's program of study may include courses in the theory and criticism of art and relevant areas of study outside the School of Art. The research skills requirement, in the history of art emphasis, is a reading knowledge of two foreign languages. In the art education emphasis, the research skills requirement may be met by completing a minimum of three of the specified research courses. Satisfactory completion of written and oral preliminary examinations, a dissertation demonstrating original research, and a final oral defense before an examining committee of the faculty are also required.

Students in the MA program in art history must demonstrate a reading knowledge of a foreign language, pass a written general examination in art history, submit a thesis, and pass a final oral examination.

Applicants are admitted to all semesters. However, priority will be given to those applications completed no later than January 1st for the following three semesters. Applications for assistantships should be made to the graduate coordinator of the School of Art by January 1st for the fall semester. Information on additional fellowships may be obtained from the Office of Student Financial Aid.

The Georgia Museum of Art is a significant resource for the School of Art. It has a major collection of American paintings and over 5000 works on paper from all periods. The museum sponsors a full schedule of in-house and traveling exhibitions each year.

The following review and evaluation procedures apply to all students enrolled in a program leading to the MFA degree in studio art:

Upon completion of 18 semester hours of resident graduate work, the student must pass an oral examination which, with supporting creative studio work, will constitute an evaluation of his/her capability for continued enrollment in the MFA degree program. The evaluation will be conducted by a duly appointed faculty committee, which will determine if the student will be (1) continued in the regular MFA program, or (2) required to complete additional work beyond the regular MFA requirements, for the specific purpose of improving his/her skills, or (3) counseled to withdraw from the MFA program and consider alternative educational goals.

Students who successfully meet the requirements for continued enrollment in the MFA degree program, will be required to arrange a public exhibition of creative studio work during the final semester of residence. The exhibition will be evaluated by faculty, who will determine if the exhibited work represents a satisfactory level of professional accomplishment by the candidate. Faculty approval of the exhibition is a requirement for graduation.

Although some courses listed below have specific prerequisites, instructors for graduate courses may waive some prerequisites if the student can demonstrate adequate training or experience. Likewise, the instructor may advise a student to withdraw from the class due to inadequate preparation or motivation.

Art

ARTS 4900/6900. Professional Practices: The Business Side of Art. 3 hours.
The business practices necessary for an exhibiting and practicing artist to survive in the contemporary art market. Assignments will focus on professional development. Each student will leave the class with a packet of material to approach galleries, museums, and other art centers for exhibitions.

ARTS 4920/6920. Seminar in Contemporary Art. 3 hours.
Undergraduate prerequisite: ARHI 2100.
Contemporary art from the point of view of studio artists.

ARTS 7990. Teaching Practicum. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Pedagogical readings related to art.

ARTS 8100. Graduate Seminar in Art. 3 hours. 3 hours lab per week.
Consideration of current issues in art practice and theory.

ARTS 8350. Aesthetics and Society. 3 hours.
Prerequisite: Permission of department.
Arthur Danto has categorized our era as the end of art. Is art still important? Why is it worth teaching? Students will examine these and other related issues. Readings will be drawn from John Dewey, Richard Rorty, Theodor Adorno, Arthur Danto, Philip Jackson, Elliott Eisner, and others.

ARTS 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ARTS 9010. Directed Study in Art History. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of school.
Directed study for Ph.D. students with a concentration in art history who have completed all required courses and are preparing for written and oral preliminary examinations.

ARTS 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Art History

ARHI 4000/6000. Early Greek Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Vase painting, sculpture, and architecture from the Geometric through the Archaic periods.

ARHI 4010/6010. Classical and Hellenistic Greek Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Sculpture, architecture, and some vase painting from the Classical and Hellenistic periods emphasizing major monuments, including the Temple of Zeus at Olympia, the Parthenon, and the Great Altar of Zeus and Athena at Pergamon.

ARHI 4020/6020. Roman Art and Architecture. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Buildings and wall painting of Pompeii, Roman Republican portraiture, Imperial portraiture, and major buildings and their associated architectural sculpture located in Rome and other sites within the Empire.

ARHI 4030/6030. Classical Tradition in the Visual Arts. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The influence of classical antiquity on the art and architecture of post-classical eras tracing formal affinities and the myths of classical gods and heroes.

ARHI 4050/6050. Icons in Byzantium: Theory and Practice. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Various issues of panel painting in the Byzantine Empire. The Byzantines not only mastered the production of such pieces of art but additionally they developed a highly sophisticated theory of images that was unique in the medieval world. This course explores the dynamics between the theory and the practice of creating, displaying, and venerating icons.

ARHI 4060/6060. Image in Space: Mural Painting and Architecture in Byzantium. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The issue of the interdependence of mural painting and architectural space in Byzantine Art.

ARHI 4100/6100. Early Medieval Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Architecture, sculpture, and painting in Western Europe from the seventh through the eleventh centuries.

ARHI 4110/6110. Romanesque Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Architecture, sculpture, and painting in Western Europe of the eleventh and twelfth centuries with particular emphasis on France.

ARHI 4120/6120. Gothic Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Architecture, sculpture, and painting of the twelfth and thirteenth centuries in Europe with special emphasis on France.

ARHI 4130/6130. Late Gothic Art in Italy. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Principal monuments and artists of the thirteenth and fourteenth centuries in Italy emphasizing figures such as Giotto, Duccio, Simone Martini, and Ambrogio Lorenzetti.

ARHI 4200/6200. Early Renaissance in Italy. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Architecture, sculpture, and painting of the fifteenth century focusing on Tuscany, and the emergence and development of the new art principles in Florence represented in the work of such artists as Masaccio, Brunelleschi, Donatello, Alberti, Fra Angelico, Filippo Lippi, Ghirlandaio, Pollaiuolo, and Botticelli.

ARHI 4210/6210. High Renaissance and Mannerism in Italy. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The climactic period of the Renaissance in Italy with special emphasis on such key figures as Leonardo, Michelangelo, Raphael, Protormo, Rosso Fiorentino, and Bronzino.

ARHI 4220/6220. Northern Renaissance. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Painting north of the Alps, primarily in Flanders and Germany from the fourteenth to the sixteenth century, with special attention to the van Eycks, van der Weyden, Bosch, Durer, and Grunewald.

ARHI 4290/6290. Renaissance and Baroque Sculpture. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The development of period styles and an analysis of the role of function and tradition in European sculpture for ca. 1260-1700, with special attention to the work of Donatello, Michelangelo, and Bernini.

ARHI 4300/6300. Italian Baroque Art and Architecture. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.

Baroque art and architecture in Italy, with special emphasis on Rome, and such important figures as the Carracci, Caravaggio, Bernini, and Borromini.

ARHI 4310/6310. Northern Baroque Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
French and Dutch art of the seventeenth century with emphasis on such key figures as Rubens, Velasquez, Rembrandt, and Poussin.

ARHI 4350/6350. Art and Architecture of the City of Rome. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The continuity of an artistic tradition in relation to the history of the seat of the Roman Empire, the Catholic Church, and modern Italy. Attention is given to specific sites, artistic types, and public processions.

ARHI 4400/6400. Romanticism and Neoclassicism. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
European art and architecture from ca. 1760 through 1865 including the sublime, the beautiful, the picturesque, historical revivalism, exoticism, rationalism, and eclecticism.

ARHI 4410/6410. American Art from Colonial Settlement through the Civil War. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The formation of a national identity and assimilation of European styles in painting, sculpture, and cultural artifacts such as photographs and popular illustrations. Artists include, Copley, Peale, Allston, Cole, Church, Quidor, Mount, Bingham, Heade, Bierstadt, and Homer.

ARHI 4420/6420. American Art of the Fin de Sie`cle 1876-1913. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The transition in American art from Victorianism to early Modernism in an age of science, progress and decay, tradition and ethnicity, motherhood and the "new woman." A key cultural referent will be the World's Columbian Exposition of 1893.

ARHI 4440/6440. American Modernism 1900-1946. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The creation of radical forms of artistic expression, and their seeming rejection by the Regionalists in relation to two world wars, the modern city, the depression, and revolutions in space, time, and technology. Special emphasis will be placed on the diverse group of artists mentored by Alfred Stieglitz.

ARHI 4490/6490. Rococo to Reform: European Art 1700-1760. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Art in Europe between 1700-1760, with emphasis on the new Rococo style and later call for "reform," that reflected new aesthetic attitudes and political environment. Other topics covered are the Grand Tour, "rediscovery" of antiquity, emergence of art history and criticism, and rise of "lower" genres.

ARHI 4500/6500. Realism and Impressionism. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The rise and development of naturalism in mid-nineteenth-century art in Europe.

ARHI 4510/6510. Modern Art in Europe from 1886 to 1918. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Painting and sculpture from Post-Impressionism to the end of World War I, the Cubo-Futurist revolution and approaches to expressionism and abstraction.

ARHI 4520/6520. Spirituality in Modern Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Myth and spirituality in the abstract art of the late nineteenth and twentieth centuries, as exemplified in Gauguin, Kandinsky, Klee, Brancusi, Pollock, and Rothko, among others.

ARHI 4530/6530. Nineteenth-Century Photography. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Forms, functions, and meanings of photographic production in Europe and America during the 1800s. Issues to be addressed are: the nature of the medium, its relationship to "reality," its various techniques and technology, its role in art and science, and its publics and patronage.

ARHI 4540/6540. European Art Between the Great Wars. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
High modernism in the twentieth century. Topics include Dada, Constructivism, Surrealism, the Bauhaus, and other major trends between the two World Wars.

ARHI 4550/6550. Art From 1940 to 1968. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Major artists and movements from the onset of World War II to the late 1960's in Europe and America.

ARHI 4560/6560. Art From 1968 to the Present. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Post-studio practices, stategies of appropriation, art-as-critique, and pluralism in the late twentieth century.

ARHI 4600/6600. Art of India. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Traditional art of India from the Indus valley civilization to the Muslim conquest. Major monuments of architecture, sculpture, and painting are investigated in the context of political and religious developments in the Indian subcontinent, including influences of the Indic religions of Buddhism, Hinduism, and Jainism.

ARHI 4610/6610. Arts of China. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Major trends in the arts of China from the Neolithic age to the eve of the modern period, ca. 2500 BCE to the nineteenth century CE. Factors affecting important developments in style and subject matter will be studied in the context of contemporary cultural phenomena.

ARHI 4620/6620. Japanese Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
History of Japanese art of the proto-historic period to the exposure of Japan to the West in the mid-nineteenth century. The Buddhist arts of Japan during the imperial period, the evolution of Japanese pictorial art, religious and secular architecture, and Shinto-influenced arts.

ARHI 4650/6650. Voyages and Visionaries: From Columbus to Picard. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The visual history of travel related to the building of empires from 1400 until today. Historical and fictitious travelers will be explored with reference to maps, travelogues, paintings, sculpture, photographs, and cinema. Field trips to the Hargrett Map Collection and the Georgia Museum of Art.

ARHI 4900/6900. Topics in Ancient and Medieval Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Particular topics in Ancient and Medieval art and architecture treated in depth.

ARHI 4910/6910. Topics in Renaissance and Baroque Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Particular topics in Renaissance and Baroque art and architecture treated in depth.

ARHI 4920/6920. Topics in Modern Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Particular topics in modern art and architecture from Europe or America treated in depth.

ARHI 4930/6930. Topics in Asian or Non-Western Art. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Particular topics in Asian and non-western art and architecture treated in depth.

ARHI 4940/6940. Gender Issues and Art History. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The impact of feminist theory and gay and lesbian studies on recent art historical scholarship.

ARHI 4950/6950. Independent Study. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Special projects in fields in which the student has demonstrated the ability to conduct research and write a fully and correctly annotated paper.

ARHI 6005. Processes and Principles: Italian Art and Architecture. 3 hours.
Prerequisite: Permission of department.
Through lectures and site visits in Italy, students will consider the materials, methods, and meaning of Italian art. Each semester a series of important monuments of painting, sculpture, and architecture will be studied both as significant examples of trends in the history of art and as demonstrations of the various techniques employed.

ARHI 6006. Topics in Italian Art. 3 hours.
Prerequisite: ARHI 6005.
A guided independent study, open to those students who have successfully completed Processes and Principles: Italian Art and Architecture in Cortona, Italy. Working with the art history instructor, the student will expand one of the topics first presented in Processes and Principles: Italian Art and Architecture.

ARHI 7000. Master's Research. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ARHI 7040. Art History Methodology. 1 hour.
Prerequisite: Permission of department.
Art historical methodologies as they developed from the Renaissance to the present and as they are currently employed in the diverse fields and periods of art history. Students will work with the entire art history faculty in the presentation of different methodologies.

ARHI 7300. Master's Thesis. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ARHI 8110. Special Problems in Art History. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Individual research and/or group presentation and discussion of specific problems.

ARHI 8120. Directed Study in Art History. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Individual research related to specific problems.

ARHI 8400. Topics in Byzantine Art and Architecture. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of major.
The study of Byzantine art and architecture in a broad context, including issues of cultural history, literature, theology, and ritual. The seminar introduces various methodological approaches and readings of advanced scholarship, both purely empirical as well as interpretative and theoretical.

ARHI 8580. Seminar in Renaissance Art. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Problems in European art during the Renaissance. May include topics oriented toward a single major figure, a genre, or a school. Problems concern a major branch of art history, e.g., connoisseurship or iconography.

ARHI 8600. Seminar in Italian Baroque Art. 3 hours. Repeatable for maximum 6 hours credit.
Focus on a single Italian Baroque artist, or on a regional school. Works of art and relevant literature provide materials for training in how to solve art historical problems using techniques developed in connisseurship, iconography, and source material interpretation.

ARHI 8650. Seminar in Seventeenth-or Eighteenth-Century European Art. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ARHI 2100 and permission of major.
This seminar will focus on a principal artist, style, theme, or aesthetic issue in European art of the seventeenth or eighteenth century.

ARHI 8700. Seminar in Greco-Roman Art. 3 hours. Repeatable for maximum 6 hours credit.
Focus on a single genre of Greco-Roman art (e.g., freestanding Greek sculpture from the sixth century B.C.), or on a single aspect (e.g., Roman historical reliefs).

ARHI 8870. Seminar in Asian Art. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research topics may include Hindu iconography, Chinese painting, pan-Asian Buddhist iconography, the Hindu temple, and others.

ARHI 8910. Seminar in Nineteenth-Century European Art History. 3 hours. Repeatable for maximum 9 hours credit.
Issues relating to the visual arts. Studies of major artists or movements, and thematically directed projects.

ARHI 8920. Seminar in Twentieth-Century Art History. 3 hours. Repeatable for maximum 9 hours credit.
Issues relating to the visual arts. Topical studies of major artists or movements, and thematically directed projects.

ARHI 8950. Seminar in Post-Modern Theories and Art History. 3 hours. Repeatable for maximum 9 hours credit.
Writing-intensive course focusing on film painting and related post-modern theories drawn from semiotics, gender studies, cultural studies, and post-colonial studies.

ARHI 8990. Seminar in the American Art. 3 hours. Repeatable for maximum 9 hours credit.
Topical studies of major artists, exhibitions, movements, or cultural productions significant to the development of American art.

Art Interior Design

ARID 4150/6150. Special Topics in Interior Design. 1-3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: ARID 3110 and ARID 3310 and ARID 3410 and permission of major.
Special topics for advanced students with a formal written and/or graphic presentation of the results.

ARID 4350/6350. Interior Design Practicum. 1-3 hours.
Undergraduate prerequisite: ARID 3110 and ARID 3310 and ARID 3410 and permission of major.
Individualized projects arranged with clients to explore various aspects of the interior design profession.

ARID 7890. Interior Design I. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Special problems in the planning of architectural spaces for public and residential uses.

ARID 7900. Interior Design II. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
The designing of special equipment: furniture, built-in equipment, special lighting, and custom design.

ARID 7910. Interior Design III. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Individual creative problems and coordination of special aspects of interiors from concept to construction documentation and presentation.

ARID 7920. Procedures in Interior Design. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
The procedures and practice of interior design problem-solving with emphasis on research methodologies.

Studio Art

ARST 4330/6330. Printmaking: Special Topics I. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Not open to students with credit in ARST 3330.
Undergraduate prerequisite: ARST 2310 and ARST 3300 and ARST 3310 and ARST 3320.
Special projects for advanced students.

ARST 4340/6340. Special Topics II: Printmaking. 3 hours. 6 hours lab per week.
Not open to students with credit in ARST 3390.
Undergraduate prerequisite: ARST 4330/6330.
Special topics for advanced students stressing aesthetic development with further technical instruction.

ARST 4730/6730. Fabric Design in Japan. 3 hours. 6 hours lab per week.
Prerequisite: Permission of major.
Study program in Japan incorporating intensive studio work and field trips to collections and sites.

ARST 4800/6800. Special Topics in Computer Art. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Undergraduate prerequisite: Permission of major.
Computer-generated art and design including advanced computer generated imaging, computer aided drafting, scanned image manipulation, animation, desktop publishing and presentation, and two-dimensional and three-dimensional representation of fiber and sculpture arts.

ARST 4810/6810. Three-Dimensional Computer Art. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Undergraduate prerequisite: ARST 4800/6800 and permission of major.
Three-dimensional, computer-generated art using modelling, rendering, animation, and output technique.

ARST 4910/6910. Aspects of Folk Culture. 3 hours.
Art of folk, self-taught, and visionary artists as distinct from mainstream and academic traditions.

ARST 6020. Figure Drawing/Anatomy. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: ARST 3000.
Figure drawing with consideration of the human skeletal and muscular systems, surface anatomy, and biomechanical concerns.

ARST 6160. Painting Materials and Techniques. 3 hours. 6 hours lab per week.
Historical techniques such as egg tempera, fresco, encaustic, and Venetian mode oil painting as they apply to contemporary needs; modern materials such as alkyd and polymer resins are introduced. Consideration is given to the properties of pigments, binders, grounds, and supports.

ARST 6210. Color Photography. 3 hours. 6 hours lab per week.
Fundamentals of color photography, including color theory, color temperature, lighting, and color printing. Concepts are presented in the context of contemporary trends and practices.

ARST 6220. Medium and Large Format. 3 hours. 6 hours lab per week.
Medium and large format cameras using roll, pack, and sheet films. Techniques of advanced camera handling, lighting, film processing, and refined printing. Historical and contemporary practices considered.

ARST 6230. Internship in Photography. 2-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: ARST 2200.

Practical experience with professionals, including photographers, designers, and computer specialists. Independent projects and research with editors, curators, teachers, and historians. Assist photography faculty in creative work with emphasis on studio and lab production.

ARST 7000. Master's Research. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ARST 7020. Drawing and Composition. 3 hours. 6 hours lab per week.
Prerequisite: Permission of major.
Projects in drawing including individual and group critiques.

ARST 7030. Drawing and Composition. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.
Prerequisite: ARST 7020.
A continuation of Drawing and Composition. Projects in drawing, including individual and group critiques.

ARST 7040. Drawing and Composition. 3 hours. 6 hours lab per week.
Prerequisite: ARST 7030.
Studio work in drawing, with consideration of relationship of principles to picture structure. Readings in art history and criticism.

ARST 7110. Painting. 3 hours. 6 hours lab per week.
Prerequisite: Permission of major.
Projects in painting, including individual and group critiques.

ARST 7120. Painting. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.
Prerequisite: ARST 7110.
A continuation of Painting. Projects in painting, individual and group critiques.

ARST 7130. Painting. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Studio work in painting with consideration of theoretical issues. Readings in art criticism and aesthetics.

ARST 7200. Photography. 3 hours. 6 hours lab per week.
Prerequisite: ARST 6210 and ARST 6220.
Advanced applications of the medium. Experimental camera handling and laboratory work is emphasized. Intensive practice of traditional and new technologies from the phoram to the electronic image.

ARST 7210. Special Topics in Photography. 3 hours. 6 hours lab per week.
Prerequisite: ARST 6210 and ARST 6220.
Major historical movements in photography, including comparative studies of contemporary trends and criticism with an emphasis on research and the development of library archives.

ARST 7230. Graduate Photography I. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.
Prerequisite: ARST 7200.
Practice of the photographic medium. Emphasis is placed on learning advanced techniques in the context of artistic expression.

ARST 7240. Graduate Photography II. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.
Prerequisite: ARST 7230.
A continuation of Graduate Photography I. Emphasis is placed on the proposal of art projects to be worked on in preparation for graduate exit studio.

ARST 7310. Book Art and Papermaking. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Hand papermaking as a support for other media and as a creative medium in two- or three-dimensional form. The book is examined in structure and content with skills learned in various binding techniques.

ARST 7320. Book Art and Letterpress. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Hand printing and letterpress synthesizing text and image in a narrative, serial, sequential, or experimental fashion. The book as a multiple is examined in structure and content with skills learned in binding and printing techniques.

ARST 7330. Advanced Printmaking. 3 hours. Repeatable for maximum 18 hours credit. 6 hours lab per week.
Advanced work in printmaking media, including the traditional intaglio processes; the various relief and planographic processes, and the combination of these various processes.

ARST 7410. Advanced Figure and Portrait Study in Sculpture. 3 hours. 6 hours lab per week.
Prerequisite: Permission of major.
Advanced figure modeling. Working from the model, emphasizing the structural and sculptural aspects of form. Anatomy and anatomical forms stressed.

ARST 7420. Sculpture Materials. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of major.
Formal three-dimensional concepts of sculpture applied to material or combinations of materials. In-depth work in cast bronze, cast cement, direct plaster, direct cement, fire clay, welded metal, stone, and wood.

ARST 7430. Construction Composition-Advanced Techniques in Metalcasting. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Production of wax models, venting, investing, casting, chasing, and mounting of finished work. Independent experimentation and study in cast bronze sculpture.

ARST 7500. Ceramics. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Experimentation with ceramic forms, glazes, and firing techniques.

ARST 7510. Technical Problems in Ceramics. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: ARST 7500.
Individual research in clay, glaze, and firing techniques directed towards personal style.

ARST 7520. Individual Research in Ceramics. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: ARST 7510.
Second year student begins to focus on individual style and cohesive, unified statement. Innovation in ceramic forms, glazes, and firing techniques.

ARST 7530. Individual Research in Ceramics. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: ARST 7520.
Refinement of ceramic techniques in form and surface elaboration with emphasis on individual style work that will become the M.F.A. final exhibition.

ARST 7620. Jewelry and Metalwork. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Properties of various metals and how they relate to processes and function of form and aesthetics.

ARST 7630. Jewelry. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Jewelry making processes and development of individual interpretations of those processes and products.

ARST 7640. Metalwork. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Problems in design, forming, and constructing of metals, including copper, silver, and gold. Independent study and research for solutions to design problems.

ARST 7650. Metalwork. 3 hours. 6 hours lab per week.
Prerequisite: ARST 7640.
Design problems related to form and function with attention to surface embellishment and forming techniques.

ARST 7700. Fabric Design-Structure. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Problems in fabric structure for independent study. Research combining process with design.

ARST 7710. Fabric Design-Surface. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Problems in fabric decoration for independent study. Research technology combining dye, fiber, and application process with design and function or selection.

ARST 7750. History of Fabric Design. 3 hours. 6 hours lab per week.
Prerequisite: Permission of major.
Development of the fabric arts from prehistoric periods to the present in conjunction with studio projects.

ARST 7760. Japanese Fabrics. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: Permission of major.
Japanese fabrics in a historical and cultural context and their application to contemporary fiber art in conjunction with studio projects.

ARST 7770. Peruvian Fabrics. 3 hours. 6 hours lab per week.
Prerequisite: Permission of major.
Peruvian fabrics in historical and cultural context and their application to contemporary fiber art in conjunction with studio projects.

ARST 7980. Directed Study in Major Studio Area. 3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Individual studio projects and investigation of specific problems under the direction of faculty members.

ARST 8000. General Art. 3 hours. 6 hours lab per week.
Prerequisite: ARST 7980 and permission of department.
Individual projects in drawing, painting, sculpture, jewelry and metalwork, fabric design, ceramics, and/or mixed media.

ARST 8010. General Art. 3 hours.
Prerequisite: ARST 7980 and permission of department.
Individual projects in drawing, painting, sculpture, jewelry and metalwork, fabric design, ceramics, and/or mixed media.

ARST 9210. Graduate Exit Studio. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Project of original creative works of high professional standards, together with a written report in which use is made of photographs or drawings or both and a comprehensive exhibition of creative work.

Artificial Intelligence

Donald E. Nute, Jr., *Program Director*
Walter D. Potter, *Graduate Coordinator,*
542-0361
(Boyd Graduate Studies Building)

The interdisciplinary Master of Science program in artificial intelligence is intended to prepare students for careers as developers of artificial intelligence applications or for further graduate work in artificial intelligence or related areas. The program includes foundational courses in computer science, linguistics, logic, philosophy, and psychology as well as specialized courses in artificial intelligence programming languages and techniques. Seminars emphasize knowledge based systems, natural language understanding, and logic programming.

Students are admitted to the program with degrees in many areas including business, computer science, education, linguistics, philosophy, and psychology. A liberal undergraduate education with some previous experience in computing is desirable. Most students must take a few undergraduate courses to satisfy prerequisites for required graduate courses. The required graduate courses are listed under their respective departments. Typically, required courses include: symbolic programming, artificial intelligence, symbolic logic, logic programming, and any two from knowledge based systems, computational intelligence, natural language processing, and computer vision/pattern recognition. Additional course requirements are satisfied by selecting optional courses. It normally takes two years to complete all prerequisites, all required courses, and the thesis.

A limited number of research assistantships are available. Prospective students who desire financial aid should apply to the graduate coordinator.

ARTI)CSCI 4530/6530. Introduction to Robotics. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CSCI 2720 and permission of department.
This is an introduction to robotics with a focus on autonomous mobile robots. The two major issues dealt with are: (1) cognitive behavior, and (2) motion. Cognitive behavior addresses problem solving using sensory inputs and desired goals. Motion deals with aspects of movement from simple robotic arm movement to autonomous rovers in unknown environments.

(ARTI)CSCI 4540/6540. Symbolic Programming. 3 hours.
Undergraduate prerequisite: CSCI 1302 or permission of department.
Undergraduate prerequisite or corequisite: CSCI (PHIL) 4550/6550.
Programming in LISP and PROLOG, with emphasis on artificial intelligence techniques. Other languages used for artificial intelligence work will be presented more briefly.

ARTI 7000. Master's Research. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ARTI 7007. Internship in Artificial Intelligence Business/Industry. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Internship in a professional setting allowing students to integrate their educational experience with real world situations in logic programming, expert system development, heuristic search, etc.

ARTI 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ARTI 8000. Topics in Artificial Intelligence. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Special topics in artificial intelligence. Topics will vary. Consult the program director for the specific topics to be offered in a given year.

ARTI 8800. Directed Readings in Artificial Intelligence. 1-5 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Directed reading and research in artificial intelligence in area of student's special interest.

(ARTI)CSCI 8950. Machine Learning. 4 hours.
Prerequisite: CSCI(PHIL) 4550/6550 or CSCI 4560/6560 or permission of department.
An in-depth introduction to machine learning methods and an exploration of research problems in machine learning and its applications which may lead to work on a project or a dissertation.

Biochemistry and Molecular Biology

J. David Puett, *Head*
Alan E. Przybyla, *Graduate Coordinator,*
542-1728
(Life Sciences Building)

The Department of Biochemistry and Molecular Biology is in the Franklin College of Arts and Sciences. It functions largely as a graduate department with programs of study leading to the MS and PhD degrees. There are 20 large research laboratories for biochemistry and molecular biology in the Life Sciences Building, a $36 million facility completed in 1991. The building houses a fermentation plant with facilities for the large-scale production and processing of microorganisms, animal quarters and a large suite of plant growth chambers giving the department facilities to work with any type organism. Several faculty members have labs in the Complex Carbohydrate Research Center, which is housed in a $10 million research building and is currently composed of six faculty members and 100 support personnel.

The research laboratories are equipped with most of the specialized equipment required for modern biochemical research including automated amino acid analyzers, analytical and preparative ultracentrifuges, liquid scintillation counters, recording spectrophotometers, spectrofluorimeters and stopped-flow devices, electron paramagnetic resonance spectrometers, x-ray diffraction facilities, mass spectrometers, protein sequenators, DNA synthesizers, HPLCs, minicomputers and other specialized equipment.

Graduate students are usually admitted at the beginning of fall semester, but in special cases a student with previous experience may be admitted in January. Deadline for most fellowships and assistantships is January 15, but exceptional qualifications may lead to awards at other times.

In addition to the courses listed below, a number of interdisciplinary courses such as Nucleic Acids (GENE 8920) and Molecular Genetics (GENE 8930) are offered to interested students in the biochemistry and molecular biology graduate program. The listings in biology, botany, cellular biology, genetics, and microbiology should be consulted to determine the range of courses available to graduate students majoring in biochemistry and molecular biology. One year of a foreign language at the high school or college level is required for a master or doctoral degree.

BCMB 4010/6010. Biochemistry and Molecular Biology I. 3 hours.
Undergraduate prerequisite: CHEM 2211 and CHEM 2211L.
A comprehensive treatment of biochemistry and molecular biology stressing structures of biological molecules, including proteins, nucleic acids, carbohydrates, and lipids, enzymology and selected aspects of metabolism and bioenergetics.

BCMB 4020/6020. Biochemistry and Molecular Biology II. 3 hours.
Undergraduate prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010.
A comprehensive treatment of biochemistry and molecular biology stressing aspects of metabolism, metabolic regulation, bioenergetics, and recombinant DNA methodologies.

BCMB 4030L/6030L. Laboratory Techniques in Biochemistry and Molecular Biology. 3 hours. 1 hour lecture and 6 hours lab per week.
Undergraduate prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010.

Basic techniques in biochemistry and molecular biology, including enzyme assays and purification, nucleic acid purification and characterization, chromatography, spectroscopy, and other modern methods.

BCMB(CHEM) 4110/6110. Physical Biochemistry. 3 hours.
Undergraduate prerequisite: MATH 2210.
Undergraduate prerequisite or corequisite: BCMB (BIOL)(CHEM) 3100 or BCMB 4010/6010 or PHYS 1112-1112L or PHYS 1212-1212L.
The principles of physical chemistry applied to biological molecules and systems, including current approaches in structural biology.

BCMB 4120/6120. Human Biochemistry and Disease. 3 hours.
Undergraduate prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010.
Integrated treatment of human biochemistry and selected topics on the biochemical basis of human disease. Examples will be given of inheritable and acquired disorders.

(BCMB)CHEM 4190/6190. Introduction to NMR Spectroscopy. 3 hours. 2 hours lecture and 3 hours lab per week.
Instrumental aspects of NMR spectroscopy including pulsed Fourier transform techniques, proton and carbon-13 techniques used in the analysis of organic compounds, polypeptides and other small molecules. The focus is on the operation of NMR spectrometers presently available in the University of Georgia Chemistry Department.

BCMB(ENTO) 4200/6200. Biotechnology. 3 hours.
Not open to students with credit in BCMB 4130/6130.
Undergraduate prerequisite: BCMB(BIOL)(CHEM) 3100 and GENE(BIOL) 3200.
Undergraduate prerequisite or corequisite: MIBO 3500 or CBIO(BIOL) 3400.
Applied aspects of biochemistry and molecular biology in various fields, with emphasis on the use of recombinant DNA methods and protein engineering.

BCMB 6000. General Biochemistry and Molecular Biology. 3 hours.
Not open to students with credit in BCMB 4010/6010 or BCMB 4020/6020 or BCMB 8010 or BCMB 8020.
Prerequisite: CHEM 2212 and CHEM 2212L.
Beginning intensive one-semester graduate-level course in biochemistry and molecular biology covering the structure and function of biological molecules, enzymology, metabolism, bioenergetics, and recombinant DNA technology.

BCMB 7000. Master's Research. 1-10 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

BCMB 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

BCMB 8010. Advanced Biochemistry and Molecular Biology I. 4 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010.
Advanced biochemistry and molecular biology stressing thermodynamic principles in biochemistry, structural biology, enzymology, and aspects of metabolism and bioenergetics.

BCMB 8020. Advanced Biochemistry and Molecular Biology II. 4 hours.
Prerequisite: BCMB 8010.
Advanced biochemistry and molecular biology stressing metabolism and bioenergetics, replication, transcription, RNA processing, genetic codes, translation, membrane transport, and signal transduction.

BCMB 8030. Introduction to Research in Biochemistry and Molecular Biology. 3 hours.
Prerequisite: Permission of department.
Overview of current departmental research and introduction to research facilities. Training and practical experience in oral presentation, scientific writing, and grant preparation.

BCMB(CHEM) 8040. Advanced Physical Biochemistry. 4 hours.
Prerequisite: Permission of department.
Principles in physical chemistry and biophysics to biological macromolecules, including structural biology, hydrodynamics, electronic and magnetic resonance spectroscopy, and crystallography.

BCMB 8050. Cellular and Molecular Biochemistry. 1 hour. Repeatable for maximum 5 hours credit.
Prerequisite: BCMB 8020 or permission of department.
Advanced molecular and cellular biochemistry, including structure, biosynthesis, and assembly of cell proteins and nucleic acids.

BCMB 8060. Biochemistry and Molecular Biology Seminar. 1-2 hours. Repeatable for maximum 20 hours credit.
Prerequisite: BCMB 8020.

Seminar dealing with various topics in current biochemistry and molecular biology.

BCMB 8070. Research Discussion. 1 hour. Repeatable for maximum 10 hours credit.
Prerequisite: BCMB 8010 or permission of department.
Seminar focused on current research in biochemistry and molecular biology.

BCMB 8080. Current Literature in Biochemistry and Molecular Biology. 1 hour. Repeatable for maximum 6 hours credit.
Prerequisite: BCMB 8020.
Journal club in selected topics in cell and molecular biochemistry.

BCMB 8100. Advanced Topics in Biochemistry and Molecular Biology. 1 hour. Repeatable for maximum 10 hours credit.
Prerequisite: BCMB 8020.
Selected areas in current molecular and cell biochemistry. Topics will change on a regular basis.

BCMB 8105. Advanced Topics in Biotechnology. 2 hours.
Prerequisite: BCMB 8020 and permission of department.
An in-depth study of selected topics in Biotechnology with emphasis on student presentations and discussion.

BCMB(CHEM) 8110. Advanced Topics in Protein Structure-Function Relationships. 3 hours.
Prerequisite: BCMB 8010.
The relationship of protein structure to biological function, including protein folding, conformation, stability, and enzyme mechanisms.

BCMB 8115. Nucleic Acids Structure and Function. 2 hours.
Prerequisite: BCMB 8020 or permission of department.
Advanced topics in nucleic acids structure and function. Promotion of active student participation through critical understanding of the literature, of web-based database and tools, and through the development of a non-conventional database.

BCMB 8120. Advanced Topics in Gene Expression. 2 hours.
Prerequisite: BCMB 8010.
Biochemistry and molecular biology of nucleic acids, with emphasis on biosynthesis, structure, and function.

BCMB 8130. Advanced Topics in Glycobiology. 2 hours.
Prerequisite: BCMB 8010.
Complex carbohydrates and glycoconjugates, including biosynthesis, structure, and biological function.

BCMB 8140. Advanced Topics in Genomics and Bioinformatics. 2 hours.
Prerequisite: BCMB 8010.
Contemporary approaches in the genomics of bacteria, archaea and eucarya, including computer applications on the use of various data bases.

BCMB 8150. Advanced Topics in Cellular Communication and Regulation. 2 hours.
Prerequisite: BCMB 8010.
Molecular mechanisms of intra- and inter-cellular communication, including the role of hormones, cytokines, neurotransmitters and receptors.

BCMB 8160. Advanced Topics in the Biochemical Basis of Human Disease. 2 hours.
Prerequisite: BCMB 8010.
The molecular and cellular basis of human disease with emphasis on genetic and acquired disorders.

BCMB 8170. Advanced Topics in Plant Biochemistry and Molecular Biology. 2 hours.
Prerequisite: BCMB 8010.
Advanced treatment of plant biochemistry and molecular biology, including photosynthesis and nitrogen fixation.

BCMB(CHEM) 8180. X-Ray Crystallography. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BCMB 8010 and BCMB 8040.
The basic principles of x-ray crystallography with major application to protein structure determination, including laboratories on crystallization techniques and data collection.

BCMB 8189. Fundamental Principles of NMR Spectroscopy. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: BCMB 8010 or permission of department.
Practical and theoretical aspects of NMR spectroscopy used in the analysis of small organic molecules as well as biological macromolecules. Energy and vector diagrams are employed to understand basic 1D and 2D NMR experiments. Students will gain experience by operating NMR spectrometers and by completing a semester project on a topic of their choice.

BCMB(CHEM) 8190. NMR Spectroscopy of Biomolecules. 3 hours.
Prerequisite: BCMB(CHEM) 8040.
NMR spectroscopy with applications to proteins and other biopolymers. Special attention will be given to methods of structure determination.

BCMB(CHEM) 8200. Molecular Modeling and Structure Computations. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: BCMB 8010 or permission of department.
Modern biomolecular modeling and structure computations with emphasis on the application of molecular dynamics simulations to proteins, carbohydrates, and protein-ligand complexes. Lectures will be complemented with laboratory sections on the use of modeling software and computer hardware.

(BCMB)CHEM 8220. Physical Methods in Inorganic and Bioinorganic Chemistry. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: CHEM 8210.
Physical methods used in inorganic and bioinorganic chemical research including UV/visible/near IR absorption spectroscopy, (magnetic) circular dichroism, electron paramagnetic resonance, nuclear magnetic resonance, Mossbauer and X-ray absorption spectroscopies, single crystal x-ray diffraction, and magnetochemistry.

(BCMB)CHEM 8250. Bioinorganic Chemistry. 3 hours.
Prerequisite or corequisite: BCMB 6000 or BCMB 8010 or CHEM 6400 or permission of department.
Biological processes and molecules, mainly proteins and nucleic acids, which incorporate metal ions. Topics include metal binding to biopolymers, the roles of metal ions in biological processes such as electron transfer, atom or group transfer, and the use of metal complexes as therapeutic agents.

(BCMB)CHEM 8330. Molecular Modeling. 3 hours.
Computational studies to calculate the structures of organic molecules. Specific training is given in the application of the molecular mechanics method and the MM-3 software package, ab initio calculations using the Gaussian software package, and other computational schemes. Evaluation of computational results.

(BCMB)CBIO(MIBO) 8520. Topics in Biochemistry and Molecular Genetics of Parasites. 3 hours. Repeatable for maximum 6 hours credit. 1 hour lecture and 2 hours lab per week.
Prerequisite: BCMB 8020 and GENE 8930.
Prerequisite or corequisite: CBIO 8010 or BCMB (CHEM) 8200 or GENE 8930.
Molecular genetics, cell biology, and biochemistry of parasites. Systems of unique significance to parasites will be emphasized.

(BCMB)CHEM 8810. Mass Spectrometry. 3 hours.
Modern methods of mass spectrometry covering fundamental principles, instrumentation, and data interpretation. New techniques for the structural analysis of biomolecules.

(BCMB)GENE 8910. DNA Modeling. 2 hours. 1 hour lecture and 3 hours lab per week.
The building of space filling models to help students understand the structure/function relationships of RNA and DNA. Computer modeling approaches will also be taught.

(BCMB)BTNY(GENE)(PATH) 8960. Genetics of Yeast and Filamentous Fungi. 3 hours.
Prerequisite: Permission of department.
Classical genetics and molecular biology of budding yeast, fission yeast, and model filamentous fungi. Includes life cycle, cell cycle, cytoskeleton, mating types, morphogenesis, pathogenesis, mutant screens, and cloning strategies.

BCMB 8990. Problems in Biochemistry and Molecular Biology. 1-10 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Focused research, advanced readings, and tutorials with faculty members.

BCMB 9000. Doctoral Research. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

BCMB 9300. Doctoral Dissertation. 1-15 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Biology

Daniel V. DerVartanian, *Chairman*
(Biological Sciences Building)

The Division of Biological Sciences consists of the Departments of Biochemistry and Molecular Biology, Botany, Cellular Biology, Entomology, Genetics, Marine Sciences, Microbiology, the Institute of Ecology, and the Faculty of Cell and Developmental Biology. Degrees are granted only through the departments.

BIOL)ANTH(BTNY)(ECOL)(ENTO) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: Permission of department.
Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

(BIOL)BTNY(CRSS) 4500/6500. Introduction to Gene Technology. 3 hours.
Undergraduate prerequisite: GENE(BIOL) 3200.
Methods and applications of gene technology (recombinant DNA) and related concepts in molecular biology. These will include structure and synthesis of macromolecules; cDNA and genomic cloning, polymerase chain reaction; molecular markers and mapping; gene isolation strategies; and various host-vector systems.

(BIOL)GENE 4600/6600. Evolutionary Biology. 3 hours.
Undergraduate prerequisite: BIOL 1108-1108L.
An introduction to the processes of evolution. Topics include population genetics, speciation, systematics, coevolution, chemical origin of life, history of life, geological record, and evolution of humans.

BIOL(CBIO)(VPAT) 5040/7040. Electron Microscopy. 3 hours.
Undergraduate prerequisite: [(CHEM 1212 and CHEM 1212L) or (CHEM 1412 and CHEM 1412L)] and PHYS 1112-1112L.
Instrument theory and theory of specimen preparation for both transmission and scanning electron microscopy. Fundamentals of X-ray microanalysis, image processing, and image analysis.

BIOL(CBIO) 5050L/7050L. Electron Microscopy Laboratory. 3 hours. 6 hours lab per week.
Undergraduate prerequisite or corequisite: BIOL (CBIO)(VPAT) 5040/7040 or permission of department.
Operation of both transmission (TEM) and scanning electron microscopes (SEM). Preparation of specimens (ultramicrotomy, critical point drying, negative staining) for examination in both TEM and SEM. Basics of X-ray microanalysis.

(BIOL)BTNY 6550. Bioinformatics Applications. 2 hours.
Prerequisite or corequisite: BTNY(CRSS)(BIOL) 4500/6500 or GENE 4200/6200.
The applications and concepts of computational technologies for solving problems in molecular genetics. Current programs and the principles that underlie them will be discussed. Topics include: sequence and structure databases; sequencing; mapping; sequence alignments (dynamic programming); motifs and profiles; phylogeny reconstruction; probabilistic approaches (Markov models).

BIOL 8000. Tropical Biology. 5-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Biological concepts pertaining to the tropics through intensive field study.

Botany

Gary D. Kochert, *Head*
Chris J. Peterson, *Graduate Coordinator,*
542-3754
(Plant Sciences Building)

Graduate work leading to the MS or PhD degree in botany may be undertaken by qualified students. Within specifications set by the Graduate School (see General Degrees), all degree requirements are determined by the major professor and student in consultation with an advisory committee. Inquiries by prospective students should be addressed to: Graduate Coordinator, Department of Botany.

Facilities for graduate training in botany include greenhouses, growth chambers, field plots, a herbarium, culture collection of algae and fungi, electron microscope laboratory, molecular cytology facility, monoclonal antibody facility, fully equipped computer facilities, and modern research laboratories. Research opportunities are also offered in the University Computer Center, the Electron Microscopy Laboratory, the Institute of Ecology, and the Molecular Genetics Instrumental facility.

Field work may be done at the university marine laboratories at Sapelo and Skidaway Islands, The Savannah River Ecology Laboratory, and several inland sites ranging from the coastal plains to the Blue Ridge Mountains.

BTNY)PATH 4200/6200-4200L/6200L. Introductory Mycology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: (BTNY 1210-1210L and BTNY 1220-1220L) or (BIOL 1103-1103L and BIOL

1104-1104L) or (BIOL 1107-1107L and BIOL 1108-1108L).
Morphology, biology, and taxonomy of fungi. Representatives of all major groups of fungi are considered.

(BTNY)CRSS 4210/6210. Seed Physiology. 3 hours.
Undergraduate prerequisite: [CHEM 2100 or CHEM 2211 or BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010] and [PGEN 3580-3580L or GENE(BIOL) 3200 or BTNY(CRSS)(BIOL) 4500/6500].
Graduate prerequisite: [BCMB 4010/6010 or BCMB 6000] and [BTNY(CRSS)(BIOL) 4500/6500 or BTNY 8100].
Undergraduate corequisite: CRSS 3300 or HORT 4210/6210 or HORT 4440/6440-4440L/6440L or BTNY 3830-3830L.
Graduate corequisite: HORT 4210/6210 or HORT 4440/6440-4440L/6440L or BTNY 6830.
Regulation of anabolic and catabolic events during seed development, maturation, and germination processes. Ecophysiological consequences of dormancy variables, and agricultural and industrial significance of seed physiology.

(BTNY)GEOG 4220/6220. Ecological Biogeography. 3 hours.
Undergraduate prerequisite: GEOG 1111 or ECOL (BIOL) 3500-3500L or permission of department.
Patterns of plant distribution in contemporary landscapes and underlying processes, including vegetation dynamics, disturbance ecology, biogeomorphology, dendrochronology, and environmental history.

BTNY 4230/6230-4230L/6230L. Plant Anatomy. 4 hours. 2 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: BIOL 1104-1104L or BIOL 1108-1108L or (BTNY 1220-1220L and CBIO(BIOL) 3400) or permission of department.
Structure and growth of meristems; development and structure of cells, tissues, and tissue systems; comparative anatomy of stems, roots, leaves, flowers, and fruits; survey of recent advances in study of growth and development of form and emphasis on experimental approaches. Assumes elementary knowledge of cell and tissue structure.

(BTNY)GEOG 4240/6240. Plant Geography. 3 hours.
Undergraduate prerequisite: GEOG 3210 or ECOL(BIOL) 3500-3500L or permission of department.
Biogeography and ecology of the world's main terrestrial biomes. Includes world bioclimatic zonation, plant-geographic processes, other physical environmental factors, plant functional roles and types, vegetation dynamics, response to disturbance, and potential natural vegetation. Emphasis on global scale, with secondary emphasis on North America.

BTNY 4250/6250. Biology of Natural Plant Products. 3 hours.
Undergraduate prerequisite: BIOL 1104-1104L or BIOL 1108-1108L or BTNY 1220-1220L or permission of department.
The biological/ecological role of natural plant products or metabolites such as alkaloids, terpenes, and pigments in relationships and interactions among plants and between plants and animals.

(BTNY)ANTH(BIOL)(ECOL)(ENTO) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: Permission of department.
Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

(BTNY)ANTH 4300/6300-4300L/6300L. Ethnobotany. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: ANTH 1102 or permission of major.
Ethnobotanical research, with focus on knowledge and utilization of the plant world in traditional societies. Comparisons of societies in tropical forest ecosystems and evaluation of issues relating to intellectual property rights and traditional peoples' knowledge of plant species with potential economic value.

BTNY(BIOL)(CRSS) 4500/6500. Introduction to Gene Technology. 3 hours.
Undergraduate prerequisite: GENE(BIOL) 3200.
Methods and applications of gene technology (recombinant DNA) and related concepts in molecular biology. These will include structure and synthesis of macromolecules; cDNA and genomic cloning, polymerase chain reaction; molecular markers and mapping; gene isolation strategies; and various host-vector systems.

(BTNY)CBIO 4600/6600-4600L/6600L. Biology of Protists. 4 hours. 3 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: BIOL 1104-1104L or BIOL 1108-1108L or BTNY 1220-1220L.
Protists (algae, protozoa, and zoosporic fungi) with an emphasis on cell structure, evolution, and life histories. Laboratories will concentrate on examination of living and fixed materials and will include methods of isolation and culturing of protists.

BTNY 4650/6650-4650L/6650L. Plant Taxonomy. 4 hours. 2 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: BIOL 1104-1104L or BIOL 1108-1108L or BTNY 1220-1220L or permission of department.
History of taxonomy, nomenclature, characters, identification principles, classification, taxonomic relationships, taxonomic literature, species biology, collecting and herbarium, floristic studies.

BTNY(ECOL) 4750/6750. Tropical Ecology and Conservation. 3 hours.
Prerequisite: BIOL 1107-1107L and BIOL 1108-1108L.
Patterns and processes in the origin, maintenance, and loss of the high biological diversity in the tropics, emphasizing particular communities and ecosystems, including tropical rainforest, tropical savannas, tropical islands, and coral reefs.

BTNY 4850/6850-4850L/6850L. Vegetation Analysis. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: (ECOL(BIOL) 3500-3500L and STAT 6220) or permission of department.
Rationale and protocols for various methods of studying vegetation at the population, community and landscape levels. Both field sampling and data analysis techniques will be covered with introduction to several software packages.

BTNY 6350-6350L. Molecular Systematics. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1104-1104L or BIOL 1108-1108L or BTNY 1220-1220L.
Phylogenetic analysis, molecular systematic methods, relationships within the higher plants, algae, and fungi based upon analyses of DNA sequences and DNA-derived markers from nuclear and organellar genomes. Labs: computer-assisted techniques for phylogenetic analysis of macromolecular data; individual projects involving the analysis of DNA sequence data.

BTNY(BIOL) 6550. Bioinformatics Applications. 2 hours.
Prerequisite or corequisite: BTNY(CRSS)(BIOL) 4500/6500 or GENE 4200/6200.
The applications and concepts of computational technologies for solving problems in molecular genetics. Current programs and the principles that underlie them will be discussed. Topics include: sequence and structure databases; sequencing; mapping; sequence alignments (dynamic programming); motifs and profiles; phylogeny reconstruction; probabilistic approaches (Markov models).

BTNY 6710-6710L. Principles of Plant Systematics. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1104-1104L or BIOL 1108-1108L or BTNY 1220-1220L.
Systematics, nomenclature, rank and taxa, phylogenetic and phenetic methods, problem design, analytical procedures, data presentation, identification of special groups, classification, phylogenetic relationships, literature and bibliographic aids. Labs: morphology and arrangement of selected phylogenetically significant families; literature-based study of small genus or species complex.

BTNY 6720-6720L. Plant Variation and Evolution. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: GENE(BIOL) 4600/6600.
Variation and evolution in plants, genotypic and phenotypic patterns, genetic diversity, adaptation, breeding systems, polyploidy, hybridization, apomixis, evolutionary data in population genetics and systematics, literature, experimental design, population sampling. Variation analysis, breeding techniques, data presentation, population analysis, molecular evolution.

BTNY 6830. Plant Physiology. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100.
Plant physiology for students with cell physiology or biochemistry background. Water relations, mineral nutrition, transport of materials, respiration, photosynthesis, growth and development.

BTNY 7000. Master's Research. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

BTNY 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 14 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

BTNY 7360. Teaching Internship in Biological Sciences. 1-2 hours. Repeatable for maximum 10 hours credit. 1- 2 hours lab per week.
Classroom teaching experience in undergraduate courses under the direct supervision of a faculty member.

BTNY 8020. Introduction to Botanical Research. 1-2 hours.
Prerequisite: Permission of department.
The breadth of current botanical research with the facilities available for botanical research.

BTNY 8040. Botanical Research. 1-3 hours. Repeatable for maximum 6 hours credit. 3-9 hours lab per week.
Faculty-directed, laboratory, or literature research of a botanical problem. Not for thesis or dissertation research.

BTNY 8100. Plant Genetics. 4 hours.
Prerequisite: GENE(BIOL)3200 or BTNY(CRSS)(BIOL) 4500/6500 or permission of department.
Principles and experimental methods in plant genetics, gene expression, and gene evolution. Topics are interrelated with those of Plant Cellular Biology and Plant Development.

BTNY 8110. Plant Cellular Biology. 4 hours.
Prerequisite: BTNY 8100 or permission of department.
Plant cell biology, including cell structure and function, physiology, biochemistry, and environmental responses. Topics are interrelated with those in Plant Genetics and Plant Development.

BTNY 8111. Plant Development. 4 hours.
Prerequisite: BTNY 8100 or permission of department.
Concepts and methods in plant growth and development, including molecular, genetic, cellular and organismal approaches. Topics are interrelated with those in Plant Genetics and Plant Cellular Biology.

(BTNY)ECOL 8120-8120L. Plant Reproductive Ecology. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: Permission of department.
Pollination ecology, breeding systems, patterns of gene flow via pollen and seed dispersal, flower arrangement and phenology, and implications of reproductive biology for demography. Group and individual laboratory projects.

BTNY 8140. Algal Ecology. 2 hours.
Prerequisite: CBIO(BTNY) 4600/6600-4600L/6600L or permission of department.
Physiological ecology of algae found in various habitats, including phytoplankton, benthic microalgae, seaweeds, and symbiotic associations.

(BTNY)ECOL(ENTO) 8150. Wetland Ecology. 3 hours.
Prerequisite: Permission of department.
Principles of ecology, elemental cycling, hydrology, policy and management of marine and freshwater wetlands.

(BTNY)ECOL(ENTO) 8150L. Wetland Ecology Laboratory. 1 hour. 3 hours lab per week.
Prerequisite: ECOL(ENTO)(BTNY) 8150 or permission of department.
Techniques for the study of marine and freshwater wetlands. Optional weekend field trips will explore distant wetland sites.

(BTNY)PATH 8210-8210L. Biology of Ascomycetes. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: PATH(BTNY) 4200/6200-4200L/6200L.
Comparative morphology of ascomycetes and their asexual stages; principles of taxonomy and training in identification.

BTNY 8230. Monoclonal Antibodies as Research Tools. 5 hours. 2 hours lecture and 9 hours lab per week.
Prerequisite: BCMB 6000.
The theoretical and practical aspects of antibodies as research tools in the life sciences. Production of both polyclonal and monoclonal antibodies will be considered, as well as their applications for immunovisualization, immunopurification, immunoquantitation, and other analytical applications.

(BTNY)ECOL(FORS) 8310. Population Ecology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L and permission of department.
Advanced ecological theory to biological populations. Mathematical and evolutionary treatment of population growth and regulation, niche theory, foraging theory, predator-prey theory, habitat selection, and competition.

BTNY(PATH) 8320-8320L. Zoosporic Fungi and Slime Molds. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: PATH(BTNY) 4200/6200-4200L/6200L.
Comparative biology of zoosporic fungi and slime molds as organisms. Topics include current research in morphology and development, phylogeny, physiology, ecology and the use of selected organisms as model systems. Laboratory will emphasize isolation and cultivation of these organisms and demonstration of their reproductive stages.

BTNY(PATH) 8340-8340L. Experimental Mycology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: PATH(BTNY) 4200/6200-4200L/6200L.
Fungal biology and ecology and the use of fungi as experimental organisms in the study of development and molecular biology and genetics.

BTNY 8360. Fungal Ecology. 3 hours.
Prerequisite: PATH(BTNY) 4200/6200-4200L/6200L.
The role of fungi in the environment. Topics include fungal populations; biotic interactions with plants, insects, and other fungi; decomposition and nutrient cy-

cling; fungal biomass and productivity; fungi in extreme environments.

BTNY(ECOL)(FORS) 8410. Community Ecology. 4 hours.
Prerequisite: ECOL 4010/6010-4010L/6010L and STAT 4220.
The applicability of advanced theory to multi-species communities. Patterns and processes that influence species composition, diversity, and function. Topics include deterministic vs. stochastic regulation, succession, resource partitioning, patch dynamics, island biogeography, and food webs.

BTNY 8600. Aquatic Plants. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1103-1103L or BIOL 1104-1104L or BTNY 1210-1210L or BTNY 1220-1220L or permission of department.
Identification and biology of aquatic macrophytes with emphasis on field work.

BTNY 8700. Plant Population and Biology Seminar. 1-2 hours. Repeatable for maximum 15 hours credit. 2-4 hours lab per week.
Prerequisite: Permission of department.
Seminar on current research topics in plant population biology.

BTNY 8770. Communities and Ecosystems. 3 hours.
Advanced synthesis of physiological, population, community, and ecosystem studies in the major terrestrial plant associations of the world.

BTNY 8800. Plant Systematics and Evolution Seminar. 1-2 hours. Repeatable for maximum 16 hours credit. 2-4 hours lab per week.
Seminar on current botanical research topics.

BTNY 8810. Mycology Seminar. 1-2 hours. Repeatable for maximum 15 hours credit. 2-4 hours lab per week.
Seminar on current botanical research topics.

BTNY 8820. Plant Physiology Seminar. 1-2 hours. Repeatable for maximum 15 hours credit. 2-4 hours lab per week.
Seminar on current botanical research topics.

BTNY 8840. Plant Ecology Seminar. 1-2 hours. Repeatable for maximum 18 hours credit. 2-4 hours lab per week.
Seminar on current plant ecology and related research topics.

BTNY 8850-8850L. Terrestrial Biogeochemical Cycling. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L or STAT 4210 or STAT 4220.
Plant processes which mediate biogeochemical cycling on land. Includes survey of global element cycling, functions of essential elements, element acquisition, translocation and loss by plants, litter decomposition, and methods of estimating standing stocks of elements in and transfer rates of elements between ecosystem components.

BTNY 8860. Plant Anatomy, Morphology, and Cell Biology Seminar. 1-2 hours. Repeatable for maximum 18 hours credit. 2-4 hours lab per week.
Seminar on current topics in plant anatomy, morphology, and cell biology.

(BTNY)CRSS 8870. Advanced Plant Genetics. 3 hours.
Not open to students with credit in CRSS(BTNY) 8900.
Prerequisite: BTNY 8100 or permission of department.
The history, and state of the art, in genetic and molecular analysis of complex eukaryotic genomes. We will discuss in detail how genomes can be dissected into manageable parts that can be analyzed by a variety of molecular techniques, to investigate questions in genetics, breeding, and evolution. Special emphasis will be placed upon molecular analysis of quantitative inheritance, genetic mapping by a variety of techniques, physical mapping and map-based cloning, with examples drawn from various genome projects ranging from Arabidopsis to human.

BTNY 8890-8890L. Plant Physiological Ecology. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: BTNY 6830.
Energy balances, water relations, stomatal physiology, gas exchange, environmental aspects of mineral nutrition, stress physiology, and productivity.

BTNY 8930. Science Writing for General Audiences. 3 hours.
Covers basics of good writing and genres of science writing. Includes guest lectures by professional science writers. Students read and discuss science pieces from the popular press, write and critique their own pieces, and pursue special projects. Includes examination of how scientists can better communicate with a general audience.

BTNY(BCMB)(GENE)(PATH) 8960. Genetics of Yeast and Filamentous Fungi. 3 hours.
Prerequisite: Permission of department.
Classical genetics and molecular biology of budding yeast, fission yeast, and model filamentous fungi. In-

cludes life cycle, cell cycle, cytoskeleton, mating types, morphogenesis, pathogenesis, mutant screens, and cloning strategies.

BTNY 8970. Current Topics in Research. 1-2 hours. Repeatable for maximum 15 hours credit. 2-4 hours lab per week.
Subjects of current interest in plant research. Current literature and modern analysis of research results. Course is designed to meet the specific research needs of the student.

BTNY 8980. Special Topics in Botany. 1-2 hours. Repeatable for maximum 18 hours credit. 2-4 hours lab per week.
Discussion of selected topics in plant biology.

BTNY 9000. Doctoral Research. 1-10 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

BTNY 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Cellular Biology

Joe W. Crim, *Head*
Marcus Fechheimer, *Graduate Coordinator,*
542-3338
(Biological Sciences Building)

The Department of Cellular Biology offers MS and PhD degrees. Requirements for the MS include 30 hours of course work, satisfactory performance on written and oral examinations, and an acceptable thesis embodying original research in a specialized area. Requirements for the PhD include 30 hours of coursework, satisfactory performance on written and oral examinations and an acceptable dissertation and defense thereof. Required core course work for both MS and PhD includes: Introduction to Research in Cellular Biology (CBIO 6130); Molecular Cell Biology (CBIO 8010); Cellular Biology Research Techniques (Laboratory Rotations - CBIO 8920); and either Advanced Immunology (CBIO 8100), Advanced Developmental Biology (CBIO 8300), Advanced Cell Biology (CBIO 8400), or Biology of Parasitism (CBIO 8500). Additional coursework is as established by the student's committee.

The department's research strengths are in cell biology, developmental biology, and molecular parasitology. Facilities for graduate training include campus laboratories fully equipped with computers and modern instrumentation for cell sorting and image analysis, electron and confocal microscopy, molecular biology, and animal rooms equipped to handle multiple species. The department also has adjunct faculty at the Centers for Disease Control in Atlanta.

Contact the Graduate Coordinator, Dr. Marcus Fechheimer, if you have questions regarding the graduate program or see the website at http://www.uga.edu/cellbio.

CBIO(MIBO) 4100/6100. Immunology. 3 hours.
Undergraduate prerequisite: [BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010 or BCMB 4020/6020] and GENE(BIOL) 3200.
Immunology from an experimental perspective. Anatomy, development, and function of the immune system. Immune system in infectious diseases. Mechanisms and pathogenesis of immunological disorders. Evolution of immunological concepts.

CBIO 4340/6340. Biology of Aging. 3 hours.
Undergraduate prerequisite: BIOL 1107-1107L and BIOL 1108-1108L.
Graduate prerequisite: Permission of department.
Biological processes accompanying aging in human and other organisms. Emphasis on physiological decline; theoretical explanations; attempts to prolong life; and the utility and limitations of model systems used to analyze human aging.

CBIO 4500/6500-4500L/6500L. Medical Parasitology. 4 hours. 3 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Major protozoan and metazoan endo- and ectoparasites of humans. Principles of parasitism and general biology of each parasite. Vector biology, epidemiology, control, and treatment of parasitic diseases are discussed. Laboratory stresses diagnosis and identification, and introduces pathology through the use of fixed and living material.

CBIO(BTNY) 4600/6600-4600L/6600L. Biology of Protists. 4 hours. 3 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: BIOL 1104-1104L or BIOL 1108-1108L or BTNY 1220-1220L.

Protists (algae, protozoa, and zoosporic fungi) with an emphasis on cell structure, evolution, and life histories. Laboratories will concentrate on examination of living and fixed materials and will include methods of isolation and culturing of protists.

CBIO 4730/6730. Endocrinology. 3 hours.
Undergraduate prerequisite: (BIOL 1103-1103L and BIOL 1104-1104L) or (BIOL 1107-1107L and BIOL 1108-1108L).
Vertebrate endocrinology and the principles of chemical integration, emphasizing the physiology of regulatory mechanisms and the cellular and molecular bases of hormone action.

(CBIO)BIOL(VPAT) 5040/7040. Electron Microscopy. 3 hours.
Undergraduate prerequisite: [(CHEM 1212 and CHEM 1212L) or (CHEM 1412 and CHEM 1412L)] and PHYS 1112-1112L.
Instrument theory and theory of specimen preparation for both transmission and scanning electron microscopy. Fundamentals of X-ray microanalysis, image processing, and image analysis.

(CBIO)BIOL 5050L/7050L. Electron Microscopy Laboratory. 3 hours. 6 hours lab per week.
Undergraduate prerequisite or corequisite: BIOL (CBIO)(VPAT) 5040/7040 or permission of department.
Operation of both transmission (TEM) and scanning electron microscopes (SEM). Preparation of specimens (ultramicrotomy, critical point drying, negative staining) for examination in both TEM and SEM. Basics of X-ray microanalysis.

CBIO 6130. Introduction to Research in Cellular Biology. 1 hour. 2 hours lab per week.
Introduces new Cellular Biology graduate students to research in the department, to research facilities, to the Science Library, and to laboratory safety. Professional ethics and responsibilities.

CBIO 7000. Master's Research. 1-15 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

CBIO 7300. Master's Thesis. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

CBIO 7360. Teaching Internship in Cellular Biology. 1 hour. Repeatable for maximum 10 hours credit.
Prerequisite: GRSC 7770.
This course provides opportunities for senior Cellular Biology graduate students to obtain supervised, documented experience in preparing and delivering lectures and/or leading discussions.

CBIO 8010. Molecular Cell Biology. 3 hours.
Not open to students with credit in CBIO 6400.
Prerequisite: Permission of department.
Molecular cell biology emphasizing experimental approaches that have led to our current understanding of cellular architecture, macromolecular components and how they influence cell function.

CBIO 8050-8050L. Techniques in Modern Microscopy. 4 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: (PHYS 1112-1112L or PHYS 3330-3330L) and permission of department.
Modern microscopical techniques: brightfield, phase, DIC, fluorescence, confocal, scanning tunneling, and scanning and transmission electron microscopy. Related techniques: X-ray microanalysis photomicrography, and image analysis and processing.

CBIO 8070. Research Seminar in Cellular Biology. 2 hours. Repeatable for maximum 10 hours credit.
Current research in cellular biology. Emphasis on subdisciplinary subjects of cell and molecular biology, developmental biology, molecular parasitology, immunology, cellular neurobiology, and related areas.

CBIO 8100. Advanced Immunology. 3 hours.
Prerequisite: CBIO(MIBO) 4100/6100 or MMIB 4100/6100-4100L/6100L or permission of department.
Immunology with emphasis on underlying mechanisms of development and function of the immune system. Students will critically evaluate current literature and design experiments to test hypotheses.

CBIO 8300. Advanced Developmental Biology. 3 hours.
Prerequisite: [GENE(BIOL) 3200 and CBIO(BIOL) 3400] or permission of department.
Experimental analysis of invertebrate and vertebrate development.

CBIO 8400. Advanced Cell Biology. 3 hours.
Structure and function of living cells. Biological questions, molecular mechanisms, and experimental approaches.

CBIO 8480. Advanced Topics in Cell Biology. 1-5 hours. Repeatable for maximum 5 hours credit.
Current cell biological research using sources in the primary literature.

CBIO 8490. Cell Biology Seminar. 1 hour. Repeatable for maximum 6 hours credit. 1 hour lab per week.
Weekly discussion of current research in cell biology. Student presentations and development of public speaking skills.

CBIO 8500. Biology of Parasitism. 4 hours. 3 hours lecture and 1 hour lab per week.
Parasitism and host-parasite interactions from cell biological, immunological, biochemical and molecular biological perspectives. Major protozoan and helminth parasites of humans, and unique aspects of immunity to parasites and parasite cellular biochemistry and molecular genetics. The control of parasites via vaccine development and chemotherapy.

CBIO(BCMB)(MIBO) 8520. Topics in Biochemistry and Molecular Genetics of Parasites. 3 hours. Repeatable for maximum 6 hours credit. 1 hour lecture and 2 hours lab per week.
Prerequisite: BCMB 8020 and GENE 8930.
Prerequisite or corequisite: CBIO 8010 or BCMB(CHEM) 8200 or GENE 8930.
Molecular genetics, cell biology, and biochemistry of parasites. Systems of unique significance to parasites will be emphasized.

CBIO(PARA)(POUL) 8560. Seminar in Parasitology. 1 hour. Repeatable for maximum 3 hours credit. 1 hour lab per week.
Weekly discussion of parasitological topics.

CBIO 8580. Advanced Topics in Parasitology. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: CBIO 8500.
Topics in parasitology and host-parasite interactions. Either cell biological/immunological or biochemical/molecular genetic aspects of parasites.

CBIO 8920L. Cellular Biology Research Techniques. 1-2 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Corequisite: CBIO 6130.
Student rotations in the research laboratories of faculty members. Not for thesis or dissertation.

CBIO 9000. Doctoral Research. 1-15 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

CBIO 9010. Problems in Cellular Biology. 1-3 hours. Repeatable for maximum 15 hours credit. 2-6 hours lab per week.
Approved problems in cellular biology.

CBIO 9300. Doctoral Dissertation. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Chemistry

Robert A. Scott, *Head*
Donald Kurtz, *Graduate Coordinator,* 542-2016
(Chemistry Building)

The Department of Chemistry offers courses of study and research leading to the Master of Science and Doctor of Philosophy degrees. The candidate for the Master of Science degree must complete a program of study approved by his/her major professor, the graduate coordinator, and the dean of the Graduate School. The student must complete and defend a thesis based upon his/her research. This research should involve contributions of a publishable quality.

The PhD applicant chooses a major concentration in analytical, inorganic, organic, or physical chemistry. A program of study including course work in the major field and the student's research objectives must be completed and approved by the major professor, the graduate coordinator, and the dean of the Graduate School. After satisfactorily completing his/her prescribed course of study and a comprehensive written and oral examination in his/her major field, the student is officially admitted to candidacy for the PhD degree. This degree is awarded for proficiency and scholarship in research and a thorough acquaintance with a specific field of knowledge which the candidate demonstrates by the presentation and defense of a dissertation based upon independent work which contributes significantly to knowledge in the student's field.

Unless otherwise specified, all laboratory periods are three hours.

(CHEM)BCMB 4110/6110. Physical Biochemistry. 3 hours.
Undergraduate prerequisite: MATH 2210.
Undergraduate prerequisite or corequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010 or PHYS 1112-1112L or PHYS 1212-1212L.

The principles of physical chemistry applied to biological molecules and systems, including current approaches in structural biology.

CHEM(BCMB) 4190/6190. Introduction to NMR Spectroscopy. 3 hours. 2 hours lecture and 3 hours lab per week.
Instrumental aspects of NMR spectroscopy including pulsed Fourier transform techniques, proton and carbon-13 techniques used in the analysis of organic compounds, polypeptides and other small molecules. The focus is on the operation of NMR spectrometers presently available in the University of Georgia Chemistry Department.

CHEM 6400. Intermediate Inorganic Chemistry. 3 hours.
Modern theories of bonding, structure, reaction mechanisms, and synthetic methods in inorganic, organometallic, and bioinorganic chemistry.

CHEM 6911. Physical Chemistry I. 3 hours.
Fundamental principles of physical chemistry. Kinetic molecular theory, thermodynamics, equilibria, electrochemistry.

CHEM 6912. Physical Chemistry II. 3 hours.
Prerequisite: CHEM 6911.
Fundamental principles of physical chemistry. Reaction kinetics, quantum mechanics, and molecular spectroscopy.

CHEM 7000. Master's Research. 1-10 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

CHEM 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

CHEM 7500L. Basics of Scientific Glass Blowing. 1 hour. 2 hours lab per week.
The fundamentals of scientific glass-blowing. Students will work 'hands-on' developing skills and techniques useful in constructing many glass laboratory items. Bending, sealing, blowing, and cutting Pyrex glass will be covered. Students will also be introduced to different types of glass, availability of materials, and safe handling and repair of glassware.

(CHEM)BCMB 8040. Advanced Physical Biochemistry. 4 hours.
Prerequisite: Permission of department.
Principles in physical chemistry and biophysics to biological macromolecules, including structural biology, hydrodynamics, electronic and magnetic resonance spectroscopy, and crystallography.

(CHEM)BCMB 8110. Advanced Topics in Protein Structure-Function Relationships. 3 hours.
Prerequisite: BCMB 8010.
The relationship of protein structure to biological function, including protein folding, conformation, stability, and enzyme mechanisms.

CHEM 8120. Inorganic Chemistry Graduate Seminar. 1 hour. Repeatable for maximum 10 hours credit.
Current topics in inorganic or bioinorganic chemistry. Training in oral and visual presentation of inorganic and bioinorganic chemical research.

CHEM 8130. Organic Chemistry Graduate Seminar. 1 hour. Repeatable for maximum 10 hours credit.
Current topics in organic chemistry. Presentations are given by visiting scientists, UGA faculty and students. Training is given in oral and visual presentations of organic chemistry research.

CHEM 8140. Physical Chemistry Graduate Seminar. 1 hour. Repeatable for maximum 10 hours credit.
Current topics in physical chemistry and chemical physics. Presentations will be given by visiting speakers, by UGA chemistry faculty, and by students. Training will be provided in oral and visual presentations of physical chemistry research.

CHEM 8150. Analytical Chemistry Graduate Seminar. 1 hour. Repeatable for maximum 10 hours credit.
Current topics in analytical chemistry. Presentations by visiting speakers, UGA faculty and students. Training in oral and visual presentations of analytical chemical research.

(CHEM)BCMB 8180. X-Ray Crystallography. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BCMB 8010 and BCMB 8040.
The basic principles of x-ray crystallography with major application to protein structure determination, including laboratories on crystallization techniques and data collection.

(CHEM)BCMB 8190. NMR Spectroscopy of Biomolecules. 3 hours.
Prerequisite: BCMB(CHEM) 8040.
NMR spectroscopy with applications to proteins and other biopolymers. Special attention will be given to methods of structure determination.

(CHEM)BCMB 8200. Molecular Modeling and Structure Computations. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: BCMB 8010 or permission of department.
Modern biomolecular modeling and structure computations with emphasis on the application of molecular dynamics simulations to proteins, carbohydrates, and protein-ligand complexes. Lectures will be complemented with laboratory sections on the use of modeling software and computer hardware.

CHEM 8210. Chemical Applications of Group Theory. 3 hours.
The description of chemical bonding and other properties of organic and inorganic molecules in terms of group theory and symmetry. Topics include molecular symmetry and point groups, group theory and quantum mechanics, and symmetry aspects of molecular orbital theory, chemical reactions, ligand field theory and molecular vibrations.

CHEM(BCMB) 8220. Physical Methods in Inorganic and Bioinorganic Chemistry. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: CHEM 8210.
Physical methods used in inorganic and bioinorganic chemical research including UV/visible/near IR absorption spectroscopy, (magnetic) circular dichroism, electron paramagnetic resonance, nuclear magnetic resonance, Mossbauer and X-ray absorption spectroscopies, single crystal x-ray diffraction, and magnetochemistry.

CHEM 8230. Main Group Inorganic Chemistry. 3 hours.
Prerequisite: CHEM 8210.
Descriptive and theoretical aspects of the structure and reactivity of the main group elements.

CHEM 8240. Transition Metal Chemistry. 3 hours.
Prerequisite: CHEM 8210.
Descriptive and theoretical aspects of the structure and reactivity of transition metal compounds, including coordination chemistry and organometallic chemistry.

CHEM(BCMB) 8250. Bioinorganic Chemistry. 3 hours.
Prerequisite or corequisite: BCMB 6000 or BCMB 8010 or CHEM 6400 or permission of department.
Biological processes and molecules, mainly proteins and nucleic acids, which incorporate metal ions. Topics include metal binding to biopolymers, the roles of metal ions in biological processes such as electron transfer, atom or group transfer, and the use of metal complexes as therapeutic agents.

CHEM 8290. Special Topics in Inorganic Chemistry. 1-4 hours. Repeatable for maximum 15 hours credit.
A selected specialized area of inorganic, organometallic or bioinorganic chemistry. Examples include photochemistry, organometallic chemistry, kinetics and mechanisms, etc.

CHEM 8300. Stereochemistry and Conformations. 3 hours.
Structures of organic molecules in terms of molecular orbitals, stereochemistry and conformational analysis. Three dimensional structures, isomeric structures and optical activity.

CHEM 8310. Reaction Mechanisms in Organic Chemistry. 3 hours.
Selected organic reactions are discussed in terms of modern electronic structure and bonding theories. Important mechanisms are presented in the context of modern mechanistic theories. Isotope effects and reaction rates.

CHEM 8320. Synthetic Organic Chemistry. 3 hours.
Established organic chemistry synthetic procedures as applied in selected important reactions. Synthetic strategies and methodologies and retrosynthetic analysis.

CHEM(BCMB) 8330. Molecular Modeling. 3 hours.
Computational studies to calculate the structures of organic molecules. Specific training is given in the application of the molecular mechanics method and the MM-3 software package, ab initio calculations using the Gaussian software package, and other computational schemes. Evaluation of computational results.

CHEM 8340. Organic Spectroscopic Analysis. 3 hours.
Ultraviolet, infrared, H- and C- nuclear magnetic resonance and mass spectrometry as tools for the characterization of the structure of organic molecules, with particular emphasis on identifying structures for representative sets of spectra.

CHEM 8350. Physical and Biological Organic Chemistry. 3 hours.
Topics at the interface of biological and organic chemistry, with emphasis on physical methods of characterization. Proteins and enzymes, with attention to reaction kinetics, structural characterization, and structure-function relationships.

CHEM 8390. Special Topics in Organic Chemistry. 1-4 hours. Repeatable for maximum 15 hours credit.
Specialized research topics in organic chemistry. Emphasis is given to recent literature descriptions of cut-

ting edge research. Topics include X-ray crystallography, natural products, and heterocyclic chemistry.

CHEM(BCMB) 8810. Mass Spectrometry. 3 hours.
Modern methods of mass spectrometry covering fundamental principles, instrumentation, and data interpretation. New techniques for the structural analysis of biomolecules.

CHEM 8820. Electrochemistry. 3 hours.
Electrochemistry and electroanalytical chemistry, including the treatment of mass transport, interfacial and coupled chemical processes; the thermodynamics, kinetics and mechanisms of electron transfer processes; and electrochemical methodologies including controlled-potential or controlled-current methods under transient and steady-state conditions.

CHEM 8830. Electronics. 4 hours. 3 hours lecture and 3 hours lab per week.
Analog and digital electronic circuit design and construction, as well as the interfacing of computers to laboratory instrumentation.

CHEM 8840. Surface and Thin Film Analysis. 3 hours.
Surfaces and thin films, including the construction and use of ultra-high vacuum apparatus. Various microscopy and elemental analysis techniques are investigated, including XRD, SEM, STM, AFM, LEED, Auger spectroscopy, XPS, EPMA and others.

CHEM 8850. Analytical Spectrometry. 3 hours.
The instrumentation and methods used for spectrometric measurements throughout the spectrum from gamma-radiation to radio frequencies. Attention is given to the uses, applications, and limitations of all methods studied.

CHEM 8860. Advanced Analytical Chemistry. 3 hours.
Selected principles of analytical chemistry such as: techniques of analytical separations, including liquid and gas chromatography and electrophoresis; sampling theory; and chemometrics, including experimental design, statistics and data evaluation.

CHEM 8890. Special Topics in Analytical Chemistry. 1-4 hours. Repeatable for maximum 15 hours credit.
A selected specialized area of analytical chemistry. Emphasis is on current topics in cutting edge research, as presented in recent journal literature. Representative topics include Fourier transform methods, etc.

CHEM 8920. Thermodynamics and Statistical Mechanics. 3 hours.
Classical and statistical thermodynamics applied to chemical reactions, phase equilibria and solutions. The thermodynamic properties of macroscopic matter in terms of the molecular properties. Boltzman, Bose-Einstein and Fermi-Dirac distributions and their applications to physical and chemical systems.

CHEM 8930. Introduction to Quantum Chemistry. 3 hours.
The principles of quantum mechanics and their application to chemical systems. The Schrodinger equation and strategies for solving it. Studies of exactly soluble model systems such as the particle in a box, harmonic oscillator, rigid rotor, and the hydrogen atom.

CHEM 8940. Chemical Kinetics and Dynamics. 3 hours.
Mechanisms and rates of chemical reactions in the gas phase and in solution. Fast time-resolved experimental techniques to measure reaction rates and reaction intermediates. Photochemical and crossed molecular beam studies of elementary reactions. Energy transfer and state-specific disposal of energy in simple reactions. Unimolecular and bimolecular rate theories.

CHEM 8950. Advanced Quantum Chemistry. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: CHEM 8930.
Topics in quantum and computational chemistry including detailed studies of atomic and molecular electronic structure and bonding. Various strategies and methodologies for computations of molecular structure and bonding, including the evaluation of these strategies in the context of experimental data.

CHEM 8960. Molecular Spectroscopy. 3 hours.
Prerequisite: CHEM 8210 and CHEM 8930.
Optical absorption and emission spectroscopy of diatomic and polyatomic molecules and how the details of spectra can be used to determine molecular structure and intramolecular dynamics. Microwave, infrared, UV-visible, and photoelectron spectroscopy are studied with emphasis on the high resolution measurements possible with laser instruments.

CHEM 8990. Special Topics in Physical Chemistry. 1-4 hours. Repeatable for maximum 15 hours credit.
A selected specialized area of physical chemistry or chemical physics. Typical areas include interstellar chemistry, laser technology, ion chemistry, etc. The focus is on current literature and ongoing research in cutting edge areas.

CHEM 9000. Doctoral Research. 1-10 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

CHEM 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Classics

Robert I. Curtis, *Head*
Charles L. Platter, *Graduate Coordinator,*
542-9260
(Park Hall)

Graduate work is offered in Greek, Latin, or classical languages leading to a Master of Arts degree. Requirements for the degree include 28 hours of course work, exclusive of thesis, of which 12 hours must be in the major language (for the degree in Latin or Greek), or 18 hours in Greek and Latin combined (for the classics degree), and the remainder in any of a variety of courses in Greek, Latin, classical civilization, ancient history, archaeology, art, philosophy, linguistics, or other related areas, to be chosen in consultation with the department. All candidates complete a thesis related to their major language and must pass both a reading list exam based on a list of readings in ancient authors and modern criticism and an oral examination on their thesis. All candidates must also demonstrate a reading knowledge of German, French, or Italian.

Master's candidates in classical languages may apply for admission to any of the University's doctoral programs in comparative literature, linguistics, art history, or philosophy. The University's College of Education provides courses that may be taken simultaneously with those in classical languages to obtain teacher certification (in Georgia, Certificates T-5, T-6 and D-7). The MEd, EdS, and PhD degrees in language education/Latin are also available.

Graduate credit is offered for summer semester participation in the University of Georgia Classics Studies Abroad Program in Rome.

Several teaching and non-teaching assistantships are available; application deadline is January 1.

All degrees, except the PhD and MA degrees in Greek and classical languages, may be earned on a summers-only basis; Latin teachers from out of state are awarded tuition waivers, reducing fees to the in-state level.

Classical Culture

CLAS 4010/6010. Archaic Greece. 3 hours.
Undergraduate prerequisite: CLAS 1000 or CLAS 1020 or HIST 3250 or HIST 4311/6311 or permission of department.
The expanding world of Greek culture in the period from 750 to 480 BC, including consideration of the many new and influential developments in art, literature, history, political science, and philosophy, and their interrelationships.

CLAS 4020/6020. Greek Sanctuaries and Festivals. 3 hours.
Undergraduate prerequisite: CLAS 1000 or HIST 3250 or HIST 3310 or HIST 4311/6311 or HIST 4312/6312 or permission of department.
The major Greek sanctuaries and their physical remains, and the Greek religious calendar and its important festivals, including the Olympic Games and the Panathanaia.

CLAS 4030/6030. The Archaeology of the Greek Colonies. 3 hours.
Undergraduate prerequisite: CLAS 1000 or HIST 2301 or HIST 3250 or HIST 4311/6311 or HIST 4312/6312 or ARST 2310 or permission of department.
The archaeology of the Greek colonies in Ionia, Magna Graecia, and the Black Sea area is examined to identify and explain the combination of Greek and indigenous cultures in these areas on the fringes of the Greek world.

CLAS 4040/6040. The Hellenistic World. 3 hours.
Undergraduate prerequisite: CLAS 1000 or HIST 3250 or HIST 4311/6311 or HIST 4321/6321 or HIST 4322/6322 or permission of department.
Archaeology, art, culture, and history of Greece and the East from the rise of Alexander to Rome's annexation of Egypt.

CLAS 4100/6100. Ancient Cities of Greece and Rome. 3 hours.
Undergraduate prerequisite: CLAS 1000 or CLAS 1010 or permission of department.
Selected Greek and Roman cities and their architecture; principles upon which they are planned and laid out. Theories of Hippodamus and others, and the writ-

ings of Vitruvius. Detailed study of the topography of Athens and Rome.

CLAS 4110/6110. The Etruscans and Early Rome. 3 hours.
Undergraduate prerequisite: CLAS 1010 or HIST 3250 or HIST 4321/6321 or permission of department.
The art and culture of the people of Northern Italy known as the Etruscans, with special attention to their relationship with the Greek world and their role in the development of Rome as a city.

CLAS 4120/6120. Pompeii and Herculaneum: The Buried Cities. 3 hours.
Undergraduate prerequisite: CLAS 1010 or HIST 3250 or HIST 4321/6321 or permission of department.
Pompeii, Herculaneum, and the area destroyed by the eruption of Mt. Vesuvius. Concentration will be on political, social, religious, and economic life, combined with a study of the painting, sculpture, and architecture of the excavated cities and villas.

CLAS 4130/6130. The Archaeology of Rome's Provinces. 3 hours.
Undergraduate prerequisite: CLAS 1010 or CLAS (ANTH) 2000 or permission of department.
The archaeology of the Western and/or Eastern provinces of the Roman Empire, concentrating on the major cities and sanctuaries and their physical remains.

CLAS 4140/6140. Archaeology of Punic and Roman Carthage. 3 hours.
Undergraduate prerequisite: CLAS 1000 or CLAS(ANTH) 2000 or permission of department.
Undergraduate corequisite: CLAS 4150/6150.
The civilization of Roman North Africa from the Punic period through the Arab Conquest, using the important city of Carthage as a model.

CLAS 4150/6150. Practicum in Classical Archaeology. 3 hours.
Undergraduate prerequisite: CLAS 1010 or CLAS (ANTH) 2000 or permission of department.
Undergraduate corequisite: CLAS 4140/6140.
All aspects of modern field archaeology on a classical site, including excavation techniques, the keeping of field records, and the classification and conservation of finds from the moment of recovery to their final disposition in museums.

CLAS 4200/6200. Ancient Comedy. 3 hours.
Undergraduate prerequisite: CLAS 1000 or CLAS 1010 or CLAS 1020 or permission of department.
Ancient comedy in English translation, concentrating on fifth-century Athens, and tracing its changing focus through Menander to Plautus and Terence; also considered will be the theoretical basis of comedy as discussed by Aristotle and others, as well as the place of comedy within the history of genres.

CLAS 4210/6210. Ancient Tragedy. 3 hours.
Undergraduate prerequisite: Permission of department.
The conventions of classical tragedy as exemplified in the plays (in English translation) of the Greek dramatists Aeschylus, Sophocles, and Euripides, as well as the Roman tragedian Seneca.

CLAS 4220/6220. Roman Epic Poetry. 3 hours.
Undergraduate prerequisite: CLAS 1010 or HIST 3250 or HIST 4321/6321 or HIST 4322/6322 or permission of department.
The epic poetry of ancient Rome with special emphasis on Ennius, Vergil, and Lucan. The historical background of epic will be examined and the poems will be read in English translation, some attention being given to Renaissance and modern translations.

(CLAS)HIST 4225/6225. Medicine, Healing, and the Body in Ancient Greece and Rome. 3 hours.
The origins of the rationalist tradition in medicine; folk and cult methods of healing; the medical construction of gender differences; attitudes toward the body, including asceticism; and topics in the social history of medicine (such as childbirth, disease, and medical society) will be explored.

CLAS 4230/6230. Classical Rhetoric. 3 hours.
Undergraduate prerequisite: CLAS 1000 or CLAS 1010 or SPCM 1100.
Classical rhetoric, with special attention to Plato, Aristotle, and Cicero.

CLAS 4240/6240. Theory and Analysis of Classical Mythology. 3 hours.
Undergraduate prerequisite: CLAS 1000 or CLAS 1010 or CLAS 1020 or permission of department.
The interpretation and analysis of ancient myths, particularly those of Greece and Rome.

CLAS 4250/6250. Ancient Novel. 3 hours.
Undergraduate prerequisite: CLAS 1000 or CLAS 1010 or CLAS 1020 or permission of department.
Ancient prose fiction (in English translation), including the Latin novels of Petronius and Apuleius and examples of the Greek novel. Topics include the relationship between the novel and other literary genres, the social and intellectual background of the authors, the themes of love, travel, and magic, and the novel's audience.

CLAS 4300/6300. Selected Topics in Ancient Civilization. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: CLAS 1000 or CLAS 1010 or permission of department.

Special topics in the civilization of Greece and Rome. Topics will vary as demand requires.

(CLAS)HIST 4320/6320. Law and Society in the Greco-Roman World. 3 hours.
Law and its functions in ancient society from archaic Greece through the fifth century A.D. Includes discussion of Greek, Roman, and Christian legal codes, legal procedure, and the theory of law; also of law as a source for social history, especially issues of gender, class, crime, and the ancient economy.

(CLAS)HIST 4329/6329. Studies in Ancient Greek and Roman History. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Junior or senior standing.
Topics in ancient history that vary by year and instructor. Subject matter may include, for example, "The Hellenistic World"; "The Social History of the Roman Empire"; "Late Antiquity."

(CLAS)LING 4610/6610. Sanskrit I. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL (LING) 3030 or permission of department.
The phonology, morphology, and syntax of the classical Sanskrit language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

(CLAS)LING 4620/6620. Sanskrit II. 3 hours.
Undergraduate prerequisite: LING(CLAS) 4610/6610.
Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

CLAS 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

CLAS 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

CLAS 8000. Proseminar in Classics: Bibliography and Methods of Research. 1 hour.
Methods, history, and bibliography in philology and other areas of the classics as a background to graduate study in Greek and/or Latin.

CLAS 8010. Greek Civilization. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Topics in Greek literature or civilization.

CLAS 8020. Roman Civilization. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Topics in Roman literature or civilization.

Greek

GREK 4010/6010. Homer. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
Selections from the Iliad and/or the Odyssey.

GREK 4020/6020. Hesiod. 3 hours.
Undergraduate prerequisite: GREK 2002 or permission of department.
Study of Hesiod's two surviving poems, the Theogony and the Works and Days, with special attention to the relationship of his language and religious thinking to that of Homer.

GREK 4030/6030. Greek Lyric Poets. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
Selected Greek elegy and lyric, with attention to its political and social background, and to the relation of these literary types to epic and dramatic poetry.

GREK 4040/6040. Thucydides. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
The Peloponnesian War through selected readings.

GREK 4050/6050. Aeschylus. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
Aeschylus' plays, with emphasis on his theology and special uses of the Greek language.

GREK 4060/6060. Sophocles. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
Sophocles' plays, with emphasis on the poet's religious and humanistic values and his dramatic style.

GREK 4070/6070. Euripides. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
Euripides' plays, with emphasis on the poet's dramatic style and his treatment of social, political, and religious themes.

GREK 4080/6080. Aristophanes. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
Selected comedies of Aristophanes. Emphasis is placed on language, style, and thought, and on the generic characteristics of Greek Old Comedy.

GREK 4090/6090. Advanced Readings: Plato. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
The dialogues of Plato. Emphasis is placed on the language, style, and philosophical thought of Plato.

GREK 4100/6100. Attic Orators. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
Orations drawn from the works of Demosthenes, Lysias, and Aeschines, with emphasis on the function and techniques of persuasion in oratory and on the political and social contexts of these orations.

GREK(LATN)(LING) 4150/6150. Comparative Grammar of Greek and Latin. 3 hours.
Undergraduate prerequisite: LATN 3010 or GREK 2002 or permission of department.
Graduate prerequisite: Pass on Classics Department Greek or Latin proficiency exam or permission of department.
The positions of Greek and Latin within the Indo-European language family with special attention to the phonological evolution of both Greek and Latin from Proto-Indo-European.

GREK 4200/6200. Readings in Selected Greek Authors. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: GREK 2002 or permission of department.
Selected Greek authors to be chosen according to the interests of students and instructor.

GREK 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

GREK 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

GREK 8010. Readings and Research in Greek Literature. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Intensive readings and research in Greek literature and pertinent critical readings; the topic examined will be determined by the student's prior training and interests.

Latin

LATN 4010/6010. Roman Rhetoric. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the orations and rhetorical writings of Cicero, Quintilian, Seneca Rhetor, and others.

LATN 4020/6020. Roman Epic Poetry. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the Latin epic poets Ennius, Vergil, Lucan, and others.

LATN 4030/6030. Roman Historians. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from Roman historical writers such as Caesar, Sallust, Ammianus Marcellinus, and others.

LATN 4040/6040. Roman Elegy. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the elegiac works of Tibullus/Sulpicia, Propertius, and Ovid, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

LATN 4050/6050. Roman Epistles. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the letters of Cicero, Seneca, Pliny the Younger, and others.

LATN 4060/6060. Roman Satire. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from such satirists as Horace, Juvenal, and others.

LATN 4070/6070. Roman Drama. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.

Readings from the comedies of Plautus and Terence, and the tragedies of Seneca, and others.

LATN 4080/6080. Roman Didactic Poetry. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from Lucretius' De Rerum Natura, Vergil's Georgics, and others. The poet as teacher; the manner in which poetic form and imagery express philosophy.

LATN 4090/6090. Latin of Later Antiquity and the Middle Ages. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from Latin authors of late antiquity and the Middle Ages. Study of Latin vocabulary and style during late antiquity and the Middle Ages.

LATN 4100/6100. Roman Biography. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from Latin biographical authors such as Nepos, Suetonius, Tacitus, the Scriptores Historiae Augustae, and Einhard.

(LATN)GREK(LING) 4150/6150. Comparative Grammar of Greek and Latin. 3 hours.
Undergraduate prerequisite: LATN 3010 or GREK 2002 or permission of department.
Graduate prerequisite: Pass on Classics Department Greek or Latin proficiency exam or permission of department.
The positions of Greek and Latin within the Indo-European language family with special attention to the phonological evolution of both Greek and Latin from Proto-Indo-European.

LATN 4200/6200. Catullus. 3 hours.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the Carmina of Catullus, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

LATN 4210/6210. Horace. 3 hours.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the works of Horace, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

LATN 4220/6220. Ovid. 3 hours.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the Metamorphoses and non-elegiac works of Ovid, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

LATN 4300/6300. Cicero and the Roman Republic. 3 hours.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the orations and other works of Cicero, and from the works of Caesar, Sallust, and other contemporary writers.

LATN 4310/6310. Livy. 3 hours.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the Ab Urbe Condita of Livy, with attention to literary and historical issues surrounding the author and his works.

LATN 4320/6320. Tacitus. 3 hours.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings from the Annales, Historiae, and/or minor works of Tacitus, with attention to literary and historical issues surrounding the author and his works.

LATN 4400/6400. Advanced Readings in Latin. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: LATN 3010.
Graduate prerequisite: Permission of department.
Readings in one or more Latin authors or genres. Topics to be selected on the basis of student needs.

LATN 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

LATN 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

LATN 7770. Latin Teaching Apprenticeship. 1-3 hours. Repeatable for maximum 3 hours credit. 1-3 hours lecture and 1-3 hours lab per week.
Prerequisite: Permission of department.
The teaching of elementary Latin at the college level; an introduction to methods and materials. Observations and practice teaching are required.

LATN 8010. Readings and Research in Latin Prose. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.

Latin prose literature and pertinent critical writings. The topic, author, or genre covered will be determined by the student's previous training and interests.

LATN 8020. Readings and Research in Latin Poetry. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Latin poetic literature and pertinent critical writings. The topic, author, or genre covered will be determined by the student's previous training and interests.

Comparative Literature

James H. McGregor, *Co-Head*
Gabriel Ruhumbika, *Co-Head*
Thomas Cerbu, *Graduate Coordinator,*
542-2263
(Joseph Brown Hall)

Foreign language requirements: MA, fluent reading knowledge of one foreign language and reading competence in a second; PhD, fluent reading knowledge of two foreign languages and reading competence in a third.

MA students are required to take five graduate courses (total 15 hours) in the Department of Comparative Literature and three graduate courses (total 9 hours) in other literature and language departments, for a total of 24 hours. PhD students are required to take six graduate courses (total 18 hours) in the Department of Comparative Literature and three graduate courses (total 9 hours) in other literature and language departments, plus CMLT 9300, for a total of 30 hours beyond the MA.

The department's webpage is located at: http://www.uga.edu/~cml/.

CMLT 4050/6050. Literature and Ideas of Nature. 3 hours. Repeatable for maximum 6 hours credit.
Literary and philosophical texts of various historical periods that trace changes in how human beings understand their non-human environment.

CMLT 4070/6070. Renaissance European Literature. 3 hours.
Literature of Western Europe (Italian, French, Spanish, Germanic, and English) 1450-1600, with emphasis on literary types and prevailing ideas.

CMLT 4080/6080. Romantic European Literature. 3 hours.
The rise and development of Romanticism in the eighteenth and nineteenth centuries, with reading of selected literature and criticism.

CMLT 4090/6090. Poetry. 3 hours.
Lyric poetry from the mid-nineteenth century to the present.

CMLT 4100/6100. Mannerist and Baroque Literature. 3 hours.
Literary forms and issues in Europe ca. 1550-1700, with special attention to the intellectual background and the interrelationships between literature and other arts and sciences.

CMLT 4110/6110. Medieval European Literature. 3 hours.
The literatures of medieval Europe with emphasis on major literary genres and the philosophical and social presuppositions which inform them.

CMLT 4120/6120. Eighteenth-Century European Literature. 3 hours.
The literature of England, France, and Germany in the eighteenth century, with emphasis on literary types and prevailing ideas.

CMLT 4150/6150. The Novel. 3 hours.
The novel as a genre. Origins of prose fiction, theory of the novel, and representative readings of novels from the sixteenth through the twentieth centuries will be included.

CMLT 4200/6200. Literature and the Visual Arts. 3 hours.
Formal, philosophical, and thematic relationships between literature and one or more of the visual arts in a given period.

CMLT 4210/6210. Literature and Cinema. 3 hours. Repeatable for maximum 6 hours credit.
Formal, philosophical, and thematic relationships between literature and cinema.

CMLT 4220/6220. East Asian Cinema. 3 hours.
A survey of major works of East Asian cinema from literary, historical, cultural, and interdisciplinary perspectives.

CMLT 4230/6230. African Cinema. 3 hours.
Undergraduate prerequisite: ENGL 1030 or ENGL 1101 or ENGL 1102 or ENGL 1050H or ENGL 1060H.
Introduction to African cinema as a prolongation of both oral and written African literature. An analysis of selected films shall reveal the usage of African "aes-

thetics of narration," which shall lead to a better understanding of the discourse of African literatures written in European languages.

CMLT 4250/6250. Drama. 3 hours.
Drama as a genre from its beginnings to the present.

CMLT 4300/6300. Modernism and Postmodernism. 3 hours.
Modernism and postmodernism as literary movements, with reading of selected literature and criticism.

(CMLT)RELI 4307/6307. Comparative Islamic Literature. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The major genres of Islamic literature and its principle concepts, covering Qur'anic, hadith, legal and political literature, philosophy, theology, historiography, hagiography, and poetry, emphasizing the Medieval period and mystical prose and poetry primarily in Arabic, Persian, and Turkish. The works will be in English translation. A writing intensive course.

CMLT 4350/6350. Nineteenth-Century Literature. 3 hours.
Readings in major writers and works of nineteenth-century European and world literature.

CMLT 4400/6400. East Central European Literature and Culture. 3 hours.
The works of major modern East Central European writers, with some attention to representative cinema.

CMLT 4510/6510. Literature and Music. 3 hours.
The forms, relationships, and aesthetics of music and literature.

CMLT 4600/6600. Survey of East Asian Literature I. 3 hours.
Poetry, prose, and drama in traditional China and Japan. The works will be in English translation.

CMLT 4610/6610. Survey of East Asian Literature II. 3 hours.
Poetry, prose, and drama in China and Japan from the nineteenth and twentieth centuries. The works will be in English translation.

CMLT 4620/6620. East Asian Novel. 3 hours.
The major/minor novelists and their works, especially those of the nineteenth and twentieth centuries. The novels are in English translation.

(CMLT)LING 4740/6740. Discourse Analysis. 3 hours.
Undergraduate prerequisite: LING 2100 or permission of department.
An interdisciplinary study of language use, text analysis, and evaluation. The course will provide students with the ability to investigate and evaluate structural features of language and to identify the strategies used by different writers based on style and cultural backgrounds.

(CMLT)LING 4870/6870. Language, Gender, and Culture. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL (LING) 3030 or permission of department.
The role of language and culture in the formation of philosophical assumptions about gender differentiation in society.

CMLT 4875/6875. The African Diaspora. 3 hours.
Undergraduate prerequisite: ENGL 1030 or ENGL 1102 or ENGL 1050H or ENGL 1060H.
Exploration of creative works by younger Africans whose primary socialization took place in Europe (Great Britain, France, Germany) and in the United States. Their contribution to African culture as well as to Western cultural life in the Western World.

CMLT(AFST) 4880/6880. Survey of African Literature I. 3 hours.
African literature from its ancient oral traditions to the European colonial period based on works of African authors written in English and English translations of the African works.

CMLT(AFST) 4890/6890. Survey of African Literature II. 3 hours.
African literature since the independence of the African people from European colonial rule.

CMLT 4895/6895. Francophone/Lusophone African Literature in English Translation. 3 hours.
Undergraduate prerequisite: ENGL 1030 or ENGL 1102 or ENGL 1050H or ENGL 1060H.
Survey of modern African literatures in French and/or Portuguese language with focus on the novel.

CMLT 7000. Master's Research. 1-6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

CMLT 7100. Proseminar in Comparative Literature. 3 hours.
Prerequisite: Permission of major.
A multiple-instructor course for graduate students in Comparative Literature introducing the range of literatures and critical approaches which characterize the discipline and the department.

CMLT 7300. Master's Thesis. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

CMLT(AFST) 8020. Seminar in Literary Periods. 3 hours. Repeatable for maximum 15 hours credit.
Specific literary period from an international perspective, with emphasis on theoretical problems in periodization and the relationship of literature to other cultural institutions.

CMLT(AFST) 8030. Seminar in Literary Genres. 3 hours. Repeatable for maximum 18 hours credit.
Major genre, the epic in the literatures of Europe and America, with particular attention to recent developments in genre theory.

CMLT 8040. Problems in Literary Translation. 3 hours. Repeatable for maximum 9 hours credit.
The problems and principles of literary translation, with emphasis on the practice of translation.

CMLT 8130. Seminar in Special Topics. 3 hours. Repeatable for maximum 15 hours credit.
Selected topics in comparative studies, to be determined by the course instructor.

CMLT 8280. Problems in the History of Literary Criticism I. 3 hours. Repeatable for maximum 6 hours credit.
Literary criticism from Classical Antiquity through the mid-eighteenth century with attention to the theoretical issues and assumptions underlying the specific critical problems.

CMLT 8290. Problems in the History of Literary Criticism II. 3 hours. Repeatable for maximum 6 hours credit.
Literary criticism from the late eighteenth century to the present. Particular attention will be paid to the theoretical issues and assumptions underlying the specific critical problems under investigation.

CMLT 8300. Seminar in Contemporary Literary Theory and Criticism. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Literary theory and critical method, as exemplified by diverse figures from a number of differing national and linguistic cultures.

CMLT 8310. Seminar in East Central European Studies. 3 hours.
Intellectual trends in their East Central European inflection. The philosophical and ideological underpinnings of the East Central European aesthetic and sociological thought and expression.

CMLT 8400. Literature and Science. 3 hours. Repeatable for maximum 6 hours credit.
Models of reality implicit in "scientific" and "literary" texts.

(CMLT)GRMN 8480. Aesthetic Theory (Kant to Adorno). 3 hours.
Major 18th-, 19th-, and 20th-century tracts on aesthetic theory, mainly drawn from the German philosophical tradition. In-depth study of such concepts as beauty, the sublime, sensate knowledge, aestheticism, aesthetic ideology, the anti-aesthetic, and the end of art, against the background of contemporary continental theory.

CMLT 8500. Literature and Philosophy. 3 hours. Repeatable for maximum 6 hours credit.
The relationships between literature and philosophy, and in the philosophical issues that literature examines.

(CMLT)ENGL 8850. Seminar in Criticism and Theory. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A problem in structuralism, poststructuralism, feminism, psychoanalysis, Marxism, New Historicism, gay and lesbian studies, postmodernism, postcolonialism, or cultural studies; or of a major literary theorist.

CMLT 8980. Readings in Comparative Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent reading with regular conferences and reports, in some aspects of comparative literature.

CMLT 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

CMLT 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Japanese

JPNS 4500/6500. Readings in Japanese Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: JPNS 3020.
Selected readings of Japanese literature in the original language. Texts will vary, with focus on readings of works of lierature and discussion of issues in literary criticism in Japanese.

Computer Science

E. Rodney Canfield, Jr., *Head*
John A. Miller, *Graduate Coordinator,*
542-2911
(Boyd Graduate Studies Research Center)

The Computer Science Department offers three distinct graduate programs: Doctor of Philosophy (PhD), Master of Science (MS), and Master of Applied Mathematical Sciences (MAMS). A closely affiliated program is offered by the Artificial Intelligence Center; please see their section in this bulletin. Financial aid possibilities for graduate students include departmental teaching assistantships, departmental research assistantships, and university-wide assistantships.

The PhD degree in computer science is an advanced, intensive program designed to take students to the frontier of knowledge in both the theory and practice of Computer Science. The program prepares students for careers in research (at universities, government, or industrial research labs), teaching at colleges or universities, or advanced development at hardware or software companies. The department presently has active research groups in theory, distributed information systems, image processing, parallel processing, computational science, computational biology, artificial intelligence, computer architecture, and modeling and simulation. Admission to this program is highly selective: consideration for admission into the PhD program requires a baccalaureate degree or master's degree with a major in computer science or an allied discipline, Graduate Record Examination (GRE) test scores (including the subject test in computer science), three letters of recommendation, and a one-page personal statement outlining the applicant's background, achievements, and future goals. Students with insufficient background in computer science can apply for one of the master's level programs (MS or MAMS).

The MS degree in computer science is a comprehensive program of study intended to give qualified and motivated students a thorough foundation in the theory, methodology, and techniques of computer science. Students who successfully complete this program of study will have a grasp of the principles and foundations of computer science. They will be prepared to pursue higher academic goals, including the PhD degree. They will obtain skills and experience in up-to-date approaches to analysis, design, implementation, validation, and documentation of computer software and hardware. With these skills they will be well qualified for technical, professional, or managerial positions in government, business, industry, and education. Admission to this program is selective: consideration for admission into the MS program requires a baccalaureate degree preferably with a major in computer science or an allied discipline, Graduate Record Examination (GRE) test scores, three letters of recommendation, and a one-page personal statement outlining the applicant's background, achievements, and future goals. Though not required for admission, the subject test in computer science must be taken before completing the MS degree. Students with insufficient background in computer science must take undergraduate computer science courses in addition to their graduate program to remedy any deficiencies.

The MAMS is a professional master's degree program designed for students who seek a broad training in applied quantitative methods as preparation for professional employment in business, government, or industry. The student takes a core curriculum of courses from four participating departments: Computer Science, Mathematics, and Statistics in the Franklin College of Arts and Sciences; and Management Science in the Terry College of Business. The student may complete a degree with an interdisciplinary program of study which allows combination of expertise in computation with a chosen field of application. The degree is designed to meet the need for technical specialists who can use computation, applied mathematics, operations research, and statistics to solve complex, quantitative, real-world problems. Admission to the MAMS program is selective; applicants must have a baccalaureate degree in a quantitative discipline and have taken introductory courses in computer science, mathematics, and statistics. Applicants must submit the same information as applicants for the MS degree.

Please note that in addition to the requirements of the Department of Computer Science, applicants must satisfy all requirements of the Graduate School as noted in this bulletin.

CSCI 4050/6050. Software Engineering. 4 hours.
Undergraduate prerequisite: CSCI 2720.
Full cycle of a software system development effort, including requirements definition, system analysis, design, implementation, and testing. Special emphasis is placed on system analysis and design. The design phase includes development of a user interface. A large term project incorporates the full software life cycle.

CSCI 4140/6140. Numerical Methods and Computing. 4 hours.
Undergraduate prerequisite: CSCI 1302 and MATH 2210 and MATH 2210L.
Undergraduate prerequisite or corequisite: MATH 3000.
Numerical methods and computing. Topics include: computer arithmetic; numerical solutions of nonlinear equations; polynomial interpolation; numerical differentiation and integration; numerical solutions of systems of linear equations, initial and boundary value problems, systems of ordinary differential equations, spline functions, and the method of least squares.

CSCI 4210/6210. Simulation and Modeling. 4 hours.
Undergraduate prerequisite: CSCI 2720.
The modeling and simulation of existing or planned systems for the purpose of studying their correctness, reliability, or performance. Topics to be addressed include discrete-event simulation, continuous simulation, analysis and modeling methodologies, animation, virtual reality, and Web-based simulation.

CSCI 4350/6350. Global Information Systems. 4 hours.
Undergraduate prerequisite: CSCI 4370/6370 or CSCI 4570/6570.
Provides intermediate to advanced understanding of the use of Internet, World Wide Web, and network computing (including Java) technologies for management (search, access, integration, presentation) of multimedia information. Topics discussed include key techniques, tools and technologies for creating such systems, developing novel applications, and their impact on business.

CSCI 4370/6370. Database Management. 4 hours.
Undergraduate prerequisite: CSCI 2720.
The theory and practice of database management. Topics to be covered include efficient file access techniques, the relational data model as well as other data models, query languages, database design using entity-relationship diagrams and normalization theory, query optimization, and transaction processing.

CSCI 4470/6470. Algorithms. 4 hours.
Undergraduate prerequisite: CSCI 2720 and CSCI 2670.
Algorithms, covering basic analysis techniques, basic design techniques (divide-and-conquer, dynamic programming, greedy, and branch-and-bound), basic graph algorithms, and NP-completeness.

CSCI 4490/6490. Algorithms for Computational Biology. 4 hours.
Undergraduate prerequisite: CSCI 4470/6470 or permission of department.
Application of discrete algorithms to computational problems in molecular biology. Topics are drawn from such areas as classical sequence comparison, multiple sequence alignment, DNA sequence assembly, DNA physical mapping, genome rearrangement, evolutionary tree construction, and protein folding. Background in molecular biology is not required.

CSCI 4500/6500. Programming Languages. 4 hours.
Undergraduate prerequisite: CSCI 1302.
Undergraduate prerequisite or corequisite: CSCI 2720.
Several modern programming languages and the paradigm — procedural programming, object-oriented programming, functional programming, and logic programming — that each strives to accommodate. Projects involve at least three languages.

CSCI 4520/6520. Functional Programming. 4 hours.
Undergraduate prerequisite: CSCI 2720 and CSCI (MATH) 2610.
The functional programming paradigm: functions and types, type inference and polymorphism, higher order functions and recursion, evaluation strategies, abstract data types and modules, lists, trees, and lazy data structures, reasoning about functional programs.

CSCI(ARTI) 4530/6530. Introduction to Robotics. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CSCI 2720 and permission of department.
This is an introduction to robotics with a focus on autonomous mobile robots. The two major issues dealt with are: (1) cognitive behavior, and (2) motion. Cognitive behavior addresses problem solving using sensory inputs and desired goals. Motion deals with aspects of movement from simple robotic arm movement to autonomous rovers in unknown environments.

CSCI(ARTI) 4540/6540. Symbolic Programming. 3 hours.
Undergraduate prerequisite: CSCI 1302 or permission of department.
Undergraduate prerequisite or corequisite: CSCI (PHIL) 4550/6550.
Programming in LISP and PROLOG, with emphasis on artificial intelligence techniques. Other languages

used for artificial intelligence work will be presented more briefly.

CSCI(PHIL) 4550/6550. Artificial Intelligence. 3 hours.
The artificial intelligence approach to modeling cognitive processes. Topics include an introduction to heuristic methods, problem representation and search methods, classic AI techniques, and a review of the controversial issues of the AI paradigm of cognition as computation.

CSCI 4560/6560. Evolutionary Computation and Its Applications. 4 hours.
Prerequisite: CSCI 2720.
An in-depth introduction to evolutionary computation methods and an exploration of research problems in evolutionary computation and its applications which may lead to work on a project or a dissertation.

CSCI 4570/6570. Compilers. 4 hours.
Undergraduate prerequisite: CSCI 4720.
Graduate prerequisite: CSCI 6720.
Design and implementation of compilers for high-level programming languages. Topics include all phases of a typical compiler, including scanning, parsing, semantic analysis, intermediate code generation, code optimization, and code generation. Students design and develop a compiler for a small programming language. Emphasis is placed on using compiler development tools.

(CSCI)MATH 4630/6630. Mathematical Analysis of Computer Algorithms. 3 hours.
Undergraduate prerequisite: MATH 3000 and (CSCI (MATH) 2610 or MATH 3200 or MATH 3610).
Discrete algorithms (number-theoretic, graph-theoretic, combinatorial, and algebraic) with an emphasis on techniques for their mathematical analysis.

(CSCI)MATH 4670/6670. Combinatorics. 3 hours.
Undergraduate prerequisite: (MATH 3000 or MATH 3500) and (CSCI(MATH) 2610 or MATH 3200 or MATH 3610).
Basic counting principles: permutations, combinations, probability, occupancy problems, and binomial coefficients. More sophisticated methods include generating functions, recurrence relations, inclusion/exclusion principle, and the pigeonhole principle. Additional topics include asymptotic enumeration, Polya counting theory, combinatorial designs, coding theory, and combinatorial optimization.

(CSCI)MATH 4690/6690. Graph Theory. 3 hours.
Undergraduate prerequisite: (MATH 3000 or MATH 3500) and (CSCI(MATH) 2610 or MATH 3200 or MATH 3610).
Elementary theory of graphs and digraphs. Topics include connectivity, reconstruction, trees, Euler's problem, hamiltonicity, network flows, planarity, node and edge colorings, tournaments, matchings, and extremal graphs. A number of algorithms and applications are included.

CSCI 4730/6730. Operating Systems. 4 hours.
Undergraduate prerequisite: CSCI 4720.
Graduate prerequisite: CSCI 6720.
Coverage of the key concepts in modern operating systems. Specific topics include process management, synchronization mechanisms, scheduling strategies, deadlock detection/avoidance, memory management, file systems, protection and security, and distributed systems. Concepts will be reinforced through programming projects using a realistic operating system.

CSCI 4750/6750. VLSI System Design. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CSCI 4720.
Graduate prerequisite: CSCI 6720.
An introduction to Very Large Scale Integrated (VLSI) circuit design, including transistor behavior, circuit level design and layout techniques, and VLSI computer aided design tools.

CSCI 4760/6760. Computer Networks: Technology and Applications. 4 hours.
Undergraduate prerequisite: CSCI 2720 and CSCI 2670.
In-depth coverage of computer networks, including: digital data transmission and encoding, layered protocol models, Internet protocol, Internet client-server software, and network design methodology. Topics also include discussion of recent network technologies, legal, corporate and public-interest aspects and case studies involving public and private enterprises.

CSCI 4770/6770. Ubiquitous Computing. 4 hours.
Undergraduate prerequisite: CSCI 2720.
Prerequisite or corequisite: CSCI 4730/6730 or CSCI 4760/6760.
Introduces the technologies required to develop mobile and ubiquitous computing applications, including communication protocols, naming and location management, replication and consistency management, security and privacy, content adaptation, and battery power management.

CSCI 4800/6800. Human-Computer Interaction. 4 hours.
Prerequisite: CSCI 2720.
Issues in the design, development, and evaluation of user interfaces for computer systems. Concepts in human factors, usability, and interface design, and the effects of human capabilities and limitations on interaction with computer systems.

CSCI 4810/6810. Computer Graphics. 4 hours.
Undergraduate prerequisite: CSCI 2720 and CSCI 2670.
Principles of two-dimensional and three-dimensional interactive raster graphics. Principles of scan conversion algorithms for two-dimensional and three-dimensional graphics primitives; data structures and modeling techniques for raster graphics; interaction, visual realism, animation and user interface design; ray tracing, illumination, shading, data storage/ retrieval, software engineering and parallel computing for graphics.

CSCI 4900/6900. Special Topics in Computer Science. 1-4 hours. Repeatable for maximum 14 hours credit.
Undergraduate prerequisite: Permission of department.
Various advanced topics in Computer Science.

CSCI 4950/6950. Directed Study in Computer Science. 1-4 hours. Repeatable for maximum 8 hours credit.
Undergraduate prerequisite: Permission of department.
Content will vary in response to the interests, needs, and capability of the students and faculty involved. Individual, guided study in computer science.

CSCI 5007/7007. Internship in Computer Science Business/Industry. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Internship in a professional setting allowing the student to integrate his/her educational experience with real-world situations in software development, database technology, hardware design, networks, etc.

CSCI 5080/7080-5080L/7080L. Personal Computer System Administration. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CSCI 1100-1100L.
Management of Windows and Macintosh computer systems. Topics covered include configuration, backups, hardware and software troubleshooting, and setting up for Internet access. Hands-on laboratory emphasized.

CSCI 6300. Web Programming. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CSCI 1301-1301L and CSCI 1302.
Covers programming concepts and intermediate-level skills for Internet and Web-based software development. Covers protocols and standards, as well as client/browser and server side programming.

CSCI 6345. Internet Information Systems. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CSCI 6300.
In-depth study of some of the Web's critical technologies and components, and their applications to develop Web-based solutions for businesses. Concepts, technologies, and tools that allow use of the Web for critical business/information applications and e-commerce.

CSCI 6390. Internet Programming Project. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: CSCI 6300.
Prerequisite or corequisite: CSCI 6345.
Creation of a working electronic commerce or other significant web-based information system application under the direction of a Master of Internet Technology program faculty member. Students will use state-of-the-art techniques and tools for both client-side and server-side web design.

CSCI 6610. Automata and Formal Languages. 4 hours.
Prerequisite: CSCI 2670.
The fundamental limitations on mechanized computation. In the first part of the course, the emphasis is on possible versus impossible computations. Three classes of languages are considered: regular, context-free, and recursively enumerable. In the second part of the course the emphasis shifts to possible versus feasible computations.

CSCI 6720. Computer Systems Architecture. 4 hours.
Prerequisite: CSCI 4720.
Functional components and structure of computing systems. Topics include principles of combinational and sequential logic, number systems and computer arithmetic, hardware subsystem design and test, I/O and memory subsystem principles and techniques, instruction set architecture and implementation, pipelining andsystem-level parallelism, interconnection networks, trends.

(CSCI)ENGR 6922. Computer Systems Engineering Design Project. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: Permission of department.
Fundamentals of engineering design with emphasis toward integrating engineering science and computer science knowledge in team projects. Problem selection and application of design principles will be stressed.

CSCI 7000. Master's Research. 1-5 hours. Repeatable for maximum 25 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

CSCI 7010. Computer Programming. 4 hours.
Prerequisite: MATH 1113.

Algorithms, programs, and computing systems. Topics studied include: fundamental techniques of program development and supportive software tools; and programming projects and applications in a structured computer language. Hands-on experience using microcomputers.

CSCI 7100. Technical Report. 1-5 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Preparation of a technical report to satisfy requirements for the MAMS degree.

CSCI 7300. Master's Thesis. 1-5 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

CSCI 8050. Knowledge-Based Systems. 4 hours.
Prerequisite: [CSCI(ARTI) 4540/6540 and CSCI(PHIL) 4550/6550] or permission of department.
Theory and practice of knowledge-based system construction. Topics will include knowledge-based construction, inference engines, reasoning from incomplete or uncertain information, and user interfaces.

CSCI 8060. Advanced Software Engineering. 4 hours.
Prerequisite: CSCI 4050/6050 and CSCI 4370/6370.
Analysis of advanced methods in software engineering. Emphasis is placed on formal specification methods, advanced software testing, software reuse, distributed software design, and communication protocol specification. Studies include advanced software development tools and systems.

CSCI 8140. Parallel Processing and Computational Science. 4 hours.
Prerequisite: CSCI 4140/6140 and CSCI 6720.
Topics include computer architectures, interconnection networks, basic concepts in parallel computing, parallel algorithms, matrix multiplications, solving systems of equations, parallel direct and iterative methods, programming on different parallel architectures, and applications.

CSCI 8350. Enterprise Integration. 4 hours.
Prerequisite: (CSCI 4370/6370 or CSCI 4570/6570) and permission of department.
Technical information management aspects of enterprise integration using recent advances in workflow management, database management, distributed systems, and information systems areas of computer science. Topics include federated/multidatabase architectures and systems for integration of distributed, heterogeneous, and autonomous databases, business process modeling and workflow automation. Large group project.

CSCI 8370. Advanced Database Systems. 4 hours. Repeatable for maximum 8 hours credit.
Prerequisite: CSCI 4370/6370 and CSCI 4730/6730.
Advanced study of database systems. The course focuses on concepts, algorithms and technologies for relational, object-oriented and distributed database systems. Related technologies such as data warehouses and repositories will also be covered.

CSCI 8380. Advanced Topics in Information Systems. 4 hours.
Prerequisite: CSCI 4370/6370 or CSCI 4050/6050.
Advanced topics in information systems and databases. The two major issues dealt with are: (1) information integration and interoperability, and (2) novel database technologies. The first addresses the integration of autonomous and heterogeneous resources managing structured, semi-structured, and unstructured data. The second deals with the query formulation, and processing on heterogeneous content. Special attention will be given to emerging research areas fueled by the Web and related technologies.

CSCI 8470. Advanced Algorithms. 4 hours.
Prerequisite: CSCI 4470/6470 and CSCI 6610.
Further study of fundamental algorithms. Topics covered include advanced data structures, graph algorithms, string algorithms, geometric algorithms, parallel algorithms, and approximation algorithms for NP-complete problems.

CSCI(LING) 8570. Natural Language Processing Techniques. 4 hours.
Prerequisite: [CSCI(ARTI) 4540/6540 and LING 8150] or permission of department.
Human language from a computational point of view; algorithms and techniques for computer understanding of human-language input.

CSCI 8610. Topics in Theoretical Computer Science. 4 hours. Repeatable for maximum 12 hours credit.
Prerequisite: CSCI 4470/6470 and CSCI 6610.
Advanced topics in theoretical computer science. The selection of topics varies from year to year. Areas may include, but are not limited to, denotational semantics, complexity theory, recursion theory, and discrete algorithms.

CSCI(PHIL) 8650. Logic and Logic Programming. 4 hours.
Prerequisite: [CSCI(ARTI) 4540/6540 and PHIL (LING)4510/6510] or permission of department.
Theoretical foundations of automated reasoning and logic programming. Topics covered include proposi-

tional logic, predicate logic, first-order models, resolution principles, logic programming paradigms, nonmonotonic reasoning.

CSCI 8710. Advanced Topics in Computer Systems. 4 hours. Repeatable for maximum 12 hours credit.
Prerequisite: CSCI 4730/6730 or MATH(CSCI) 4670/6760.
Advanced topics in computer systems. The selection of topics varies from year to year. Areas may include, but are not limited to, advanced operating systems, advanced computer networks, energy aware computing, and mobile computing.

CSCI 8720. Advanced Computer Architecture. 4 hours.
Prerequisite: CSCI 6720.
Advanced and high-performance computer architecture. Topics covered include hierarchical memory design, cache memory design, pipelining, vector processing and parallel processing. Case studies of vector processors and multi-processor architectures: shared memory, distributed memory, data parallel (SIMD) and control parallel (MIMD) architectures, and heterogeneous parallel computing on a network of workstations.

CSCI 8730. Software Systems for Parallel and Distributed Computing. 4 hours. Repeatable for maximum 8 hours credit.
Prerequisite: CSCI 4730/6730.
Software systems geared at supporting parallel and distributed computing. Programming language support will focus on simple and efficient ways to express parallel programs. Compiler and operating system support will focus on new optimizations to make parallel programs execute more efficiently.

CSCI 8750. Advanced VLSI Systems Design. 4 hours.
Prerequisite: CSCI 4750/6750 and CSCI 6720.
Methods and computer tools used in the design of integrated electronics devices: layout, simulate, verify, and performance. Students will do a project design.

CSCI 8770. Computer-Aided Design. 4 hours.
Prerequisite: CSCI 4750/6750.
Computer-aided design systems, with emphasis on designer-system interaction, Algorithms and systems for synthesis, analysis, optimization by criteria, simulation, and testing.

CSCI 8810. Image Processing and Computer Graphics. 4 hours.
Prerequisite: CSCI 4810/6810 or permission of department.
Image processing and computer graphics. Topics include: image representation, restoration, transformation, classification, compression, enhancement, segmentation, image filter, design, histogram techniques, sampling and quantization, Fast Fourier Transform, image data structures, parallel/distributed processing, illumination models and surface-rendering methods. A number of applications will be presented as case studies.

CSCI 8820. Computer Vision and Pattern Recognition. 4 hours.
Prerequisite: CSCI 4810/6810 or permission of department.
Low-level and high-level vision including edge detection, connected component labeling, boundary detection, segmentation, stereopsis, motion analysis, and object recognition. Knowledge representation, knowledge retrieval and reasoning techniques in computer vision. Parallel computing, parallel architectures and neural computing for computer vision.

CSCI(ENGR) 8940. Computational Intelligence. 4 hours.
Prerequisite: CSCI(PHIL) 4550/6550 or permission of department.
Programs that solve complex problems in a particular domain, typically independent of knowledge used to direct the search for an optimal solution. Approaches include simulated annealing, genetic algorithms, neural networks.

CSCI(ARTI) 8950. Machine Learning. 4 hours.
Prerequisite: CSCI(PHIL) 4550/6550 or CSCI 4560/6560 or permission of department.
An in-depth introduction to machine learning methods and an exploration of research problems in machine learning and its applications which may lead to work on a project or a dissertation.

CSCI 8990. Research Seminar. 1 hour.
Prerequisite: Permission of department.
Weekly research seminar. Students must attend and give at least one presentation at the seminar.

CSCI 9000. Doctoral Research. 1-10 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

CSCI 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Drama and Theatre

Stanley V. Longman, *Head*
Richard Neupert, *Graduate Coordinator,*
542-2084
(Fine Arts Building)

Graduate work in drama and theatre is offered in the areas of history and theory of theatre and the dramatic arts for the PhD degree and in the creative and technical aspects of stage, film, TV, and digital media for the MFA degree. Facilities include four theatres, video production and editing areas, and an exceptional computer animation/ CAD laboratory. Extensive library facilities and cooperative research arrangements with cognate departments are available.

Prospective students who desire financial aid should complete their application with the Department of Drama and Theatre before February 15.

DRAM 4000/6000. Dramatic Writing I. 3 hours.
Undergraduate prerequisite: DRAM 3020.
Planning, writing, and polishing the short script for performance.

DRAM 4250/6250. History of Cinema I. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: DRAM 2120.
The development of the international film and of film theories from 1895 to 1945, with emphasis on cinema as a dramatic medium.

DRAM 4260/6260. History of Cinema II. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: DRAM 2120.
The development of international film and film theories from 1945 to the present, with emphasis on cinema as a dramatic medium.

(DRAM)TXMI 4270/6270. History of Costume: Antiquity to Nineteenth Century. 3 hours.
Undergraduate prerequisite: Permission of department.
Interrelationships of costume and social, cultural, political, and economic environments from antiquity to the nineteenth century.

DRAM 4280/6280. Women in Performance. 3 hours.
Women's contributions to the performing arts, focusing on contemporary American artists in such fields as theatre, film, dance, performance art, and other contemporary performance genres.

DRAM 4400/6400. Asian Theatre and Drama. 3 hours.
Genres of performance in India, China, Japan, and Southeast Asia. Focus on social and cultural significance of performances, including examples of Noh, Kabuki, Beijing Opera, Kathakali, Kutiyattam, Wayang Kulit, and Topeng.

DRAM 4460/6460. History of Dramatic Art: Special Topics. 3 hours.
The history of dramatic art in the context of studies abroad programs. Must be registered in the Studies Abroad Program and participate on-site. Offered only in conjunction with Studies Abroad.

DRAM 4480/6480. History of African American Drama and Theatre. 3 hours.
The emergence of a distinct and conscious African American theatre in the United States.

(DRAM)AFAM 4490/6490. African American Women in Cinema: Image and Aesthetics. 3 hours.
Undergraduate prerequisite: Permission of department.
Selected films by and about African and African American women. A historical/critical overview of the presentation of these women in cinema with emphasis on contemporary African and African American women film makers.

DRAM 4600/6600. Women and Film. 3 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: DRAM 2120.
A survey of feminist film criticism and theory, as well as the valuable contributions of key women directors.

DRAM 4650/6650. French Film History. 3 hours. 1 hour lecture and 2 hours lab per week.
Undergraduate prerequisite: DRAM 2120.
History of major films, directors, and movements in French cinema from 1895 to present.

DRAM 4660/6660. History of Animation. 3 hours.
Undergraduate prerequisite: DRAM 2120.
History of major techniques, films, directors, and movements in motion picture animation from 1895 to present. Emphasis on narrative and representational strategies.

DRAM 4670/6670. Film Technology and Style. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: DRAM 2120.
History of major technological inventions in cinema and the results on narrative film style.

DRAM 4800/6800. Topics in History. 3 hours. Repeatable for maximum 6 hours credit.
Topical issues in theatre or cinema, combining history and critical analysis of specific significant topics (e.g.,

national theatre or cinema, animation, authorship, genre).

DRAM 5110/7110. Stage Management. 3 hours.
Undergraduate prerequisite: Permission of department.
A survey of the organization and practical application and execution of performance events.

DRAM 5310/7310. Technical Problems. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Undergraduate prerequisite: DRAM 3340.
Special topics in advanced theory and techniques of performance technology, including scenery construction and rigging, costume construction, lighting technology, and sound.

DRAM 5320/7320. Computer-Aided Design for the Performance Arts. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Undergraduate prerequisite: DRAM 3300 and permission of department.
Techniques of computer-aided design and drafting in the performing arts.

DRAM 5330/7330. Costume Design for the Performance Arts. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 3300.
Costume design for the performing arts, emphasizing conceptualization and application for basic research and technology to meet dramatic needs.

DRAM 5331/7331. Shakespeare. 3 hours. 6 hours lab per week.
Not open to students with credit in DRAM 4330/6330.
Undergraduate prerequisite: DRAM 3500 or permission of department.
Performance of Shakespeare's plays.

DRAM 5340/7340. History of Costume and Decor. 3 hours.
Undergraduate prerequisite: DRAM 3300.
The styles of costuming, architecture, furnishing, and ornamentation in significant theatrical periods.

DRAM 5351/7351. Scenic Design for the Performance Arts. 3 hours. 9 hours lab per week.
Undergraduate prerequisite: DRAM 3300.
Undergraduate prerequisite or corequisite: DRAM 3300.
Scenic design for the performing arts, emphasizing conceptualization and application for basic research and technology to meet dramatic needs.

DRAM 5352/7352. Lighting Design for the Performance Arts. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 3300.
Lighting design for the performing arts, emphasizing conceptualization and application for basic research and technology to meet dramatic needs.

DRAM 5380/7380. Design Technology for the Performance Arts. 3 hours.
Undergraduate prerequisite: DRAM 3300.
Basic technology for performance production. Costume materials and construction, scenery rigging and movement, lighting equipment and technology, and sound equipment and practices.

DRAM 5480/7480. Topics in Design. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
A special topics course in theatre design.

DRAM 5481/7481. Topics in Cinema. 3 hours. Repeatable for maximum 9 hours credit. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: DRAM 2120.
Special topics course in cinema studies, combining history and critical analysis of specific topics (animation, national cinema, authorship, genre).

DRAM 5580/7580. Performance Topics. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: Permission of department.
Selected performance topics and theories.

DRAM 5610/7610. Play Direction Laboratory. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 5600.
The director's analysis of the script, the actor-director relationship, and theatrical style. Each student directs a one-act play or short film.

DRAM 5620/7620. Dramatic Writing II. 3 hours.
Undergraduate prerequisite: DRAM 4000/6000.
Developing the full length script for performance.

DRAM 5630/7630. Producing the New Script. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: Permission of department.
Critical and practical work in producing new scripts for writers, actors, directors, and designers.

DRAM 5640/7640. Directing for the Cinema. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 5600 or permission of department.
Theories and techniques of the dramatic cinema.

DRAM 5680/7680. Topics in Dramatic Writing. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A special topics course in dramatic writing.

DRAM 5730/7730. Advanced Costume Design for the Performance Arts. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 5330/7330.
Projects in costume design for the performing arts, emphasizing multi-character and highly complex designs using traditional and complex methods and technologies.

DRAM 5751/7751. Advanced Scenic Design for the Performance Arts. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 5351/7351.
Advanced scenic design for the performing arts, emphasizing multi-character and highly complex designs using traditional and complex methods and technologies.

DRAM 5752/7752. Advanced Lighting Design for the Performance Arts. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 5352/7352.
Projects in design (scenery, costume, lighting, sound) with an emphasis on multi-character, multi-setting and highly complex designs using current and advanced methods and technologies.

DRAM 5780/7780. Topics in Computer Technology. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
A special topics course in computer technology not otherwise offered in the drama and theatre curriculum.

DRAM 5810/7810. Computer Animation for Dramatic Media I. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 3300 and permission of department.
Computer animation in television, film, and theatre from the perspective of the director/animator. The hardware and software necessary to create computer animation is accompanied by the principles of kinetics and narrative story-telling in a visual medium.

DRAM 5820/7820. Computer Animation for Dramatic Media II. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 5810/7810 or permission of department.
Advanced computer animation techniques and digital compositing which integrate live action with computer generated environments.

DRAM 5830/7830. Computer Animation for Dramatic Media III. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: DRAM 5820/7820 or permission of department.
Preparation of a portfolio-quality computer animation project, including a narrative script story book, preproduction meetings, schedules and budgets, production and post-production.

DRAM 5860/7860. Interactive Media as Drama I. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: Permission of department.
Practice and theory of interactive multimedia as a dramatic medium. Multimedia hardware and software, principles of interactive design, and comparison of development tools and delivery systems including CD-ROM and the World Wide Web.

DRAM 5861/7861. Interactive Media as Drama II. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5860/7860.
Advanced exploration of interactive media as a dramatic form, with an emphasis on algorithmic structures, self-generating media, adaptive behaviors, and object-oriented programming techniques.

DRAM 5870/7870. Interactive Multimedia and Live Performance. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: Permission of department.
The use of computers to trigger and manipulate media events, including sound, lighting, digital images and video, and techniques allowing performers and spectators to interact with such media events in real time. Topics include sensors, motion capture, MIDI, and theoretical issues concerning the interaction between live performance and media.

DRAM 5900/7900. Film Theory. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: DRAM 4250/6250 or DRAM 4260/6260.
An introduction to 100 years of film theory and criticism. Students are introduced to key concepts and major figures from Classical Film Theory (Eisenstein, Arnheim, Bazin) through Structuralism, Semiotics, Psychoanalysis, Feminism, and Cognitive Studies.

DRAM 5970/7970. Design Portfolio. 3 hours. 3 hours lab per week.
Undergraduate prerequisite: Two of the following: DRAM 5730/7730 or DRAM 5751/7751 or DRAM 5752/7752.
Independent projects in scenery, costume, or lighting design, aimed at fully developing a presentation portfolio.

DRAM 6200. Theatre History I. 3 hours.
Historiography, criticism, and theory of theatre from its beginnings to ca. 1800.

DRAM 6210. Theatre History II. 3 hours.
Historiography, criticism, and theory of theatre from ca. 1800 to the present.

DRAM 6290. Dramatic Analysis and Criticism. 3 hours.
Dramatic art applied to script analysis and performance criticism.

DRAM 6510. Introduction to Graduate Studies in Drama. 1 hour.
Prerequisite: Permission of department.
Resources and methods for graduate level research in theatre and dramatic media.

DRAM 7050. Applied Drama Laboratory. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Individually assigned production and/or performance crew. Open only to drama majors.

DRAM 7060. Applied Drama Laboratory. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Individually assigned production and/or performance crew. Open only to drama majors.

DRAM 7070. Applied Drama Laboratory. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Individually assigned production and/or performance crew. Open only to drama majors.

DRAM 7210. MFA Project. 3 hours.
MFA thesis project.

DRAM 7370. Design Studio. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Methods of rendering designs, painting scenery, creating working drawings and models of scenery, costumes and lights for stage, film, and television.

DRAM 7511. Actor Training I: The Physical Actor I. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Physical techniques for the actor.

DRAM 7512. Actor Training I: The Physical Actor II. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 7511 and permission of department.
Physical techniques for the actor in dealing with the differing demands of stage, film, and electronic media.

DRAM 7521. Actor Training II: Voice for the Actor I. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Voice techniques for the actor.

DRAM 7522. Actor Training II: Voice for the Actor II. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 7521 and permission of department.
Voice techniques for the actor in relation to the needs of stage, film, and electronic media.

DRAM 7540. Characterization for the Actor. 3 hours. 6 hours lab per week.
Prerequisite: (DRAM 7512 or DRAM 7521) and permission of department.
Role analysis and the problems and techniques of creating subtext with special relation to text and improvisation.

DRAM 7550. Acting in Period Styles. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 7522 and permission of department.
Problems and techniques of acting in periods and styles through intensive scene study and performance.

DRAM 7560. Projects in Drama. 3 hours. Repeatable for maximum 6 hours credit. 3 hours lab per week.
Prerequisite: Permission of department.
Advanced projects in dramatic performance.

DRAM 7570. Acting for the Camera. 3 hours. 6 hours lab per week.
Prerequisite: (DRAM 7522 or DRAM 7540) and permission of department.
Applying theatre acting techniques to the demands of modern media. Practical work in class with emphasis on the vocal and physical demands of dramatic material designed for television and cinema.

DRAM 7590. Realism in Performance. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Performance techniques and challenges in realistic drama.

DRAM 7770. Internship in the Performance Arts. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Professional experience in the performance arts under the supervision of experts in the field.

DRAM 8030. Seminar in Dramatic Writing. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Dramatic form and style concentrating on specific problems and writers.

DRAM 8100. Seminar in Critical Methods. 3 hours.
Not open to students with credit in DRAM 6100.

A comparison of current critical approaches to theatre and performance.

DRAM 8200. Seminar in History of the Performance Arts. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Problems in the study of stage, cinema, and media history.

DRAM 8300. Seminar in Design for the Performance Arts. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Problems in visual design for the performing arts.

DRAM 8400. Seminar in Dramatic Theory and Criticism. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Problems in the study of dramatic theory and criticism for stage, cinema, and media.

DRAM 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree, under the direction of faculty members.

DRAM 9010. Research Seminar and Special Problems in the Performance Arts I. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Individually directed study under faculty supervision on research problems in drama, theatre, and media.

DRAM 9020. Research Seminar and Special Problems in the Performance Arts II. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Individually directed study under faculty supervision on research problems in drama, theatre, and media.

DRAM 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

English

H. Nelson Hilton, *Head*
Michael G. Moran, *Graduate Coordinator,*
542-2142
(Park Hall)

For further information regarding courses, faculty, students, admissions, language, and other requirements for the MA, MAT, and PhD degrees, as well as our annual report, handbook, and initiatives in humanities computing, rhetoric and composition, and more, please visit our website.

The English department also participates in MA and PhD programs in linguistics. Further information for these programs appears separately under Linguistics.

E-mail address for: Graduate Coordinator: gradco@english.uga.edu; website: www.english.uga.edu/grad.

ENGL(LING) 4000/6000. History of the English Language. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The development of present English through the stages of Old English, Middle English, and early Modern English. Study of elementary phonetics, phonemics, sound change, and dialect variation.

ENGL(LING) 4010/6010. American English. 3 hours.
Undergraduate prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
The history, present status, and future prospects of American English, including standards and internal variation.

ENGL(LING) 4060/6060. Old English. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The language and literature of England before the Norman Conquest, with reading of selected texts.

ENGL(LING) 4100/6100. Lexicography. 3 hours.
Undergraduate prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
Principles and methods of dictionary making with emphasis on monolingual English and bilingual dictionar-

ies. Topics may include typology of dictionaries and dictionary users, the history of lexicography, the collection and selection of headwords and examples; the definition style, pronunciation, labeling, translation equivalents, etymology, illustrations, and encyclopedic information.

ENGL(LING) 4110/6110. English Grammar. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
English grammar in the scholarly tradition of Curme and Jespersen.

ENGL(LING) 4170/6170. Second Language Acquisition. 3 hours.
Undergraduate prerequisite: ENGL(LING) 3030 or ENGL(LING) 4110/6110 or LING 2100.
Linguistic theories of second language acquisition, with emphasis on the acquisition of English. Topics include order of acquisition, sociocultural factors with linguistic bases, and neurolinguistic models.

ENGL(LING) 4180/6180. ESL Error Analysis. 3 hours.
Undergraduate prerequisite: ENGL(LING) 3030 or ENGL(LING) 4110/6110 or LING 2100.
Psycholinguistic theory applied to problems in second language learning, and the prediction of language behavior through the use of contrastive analysis.

ENGL 4210/6210. Old English Literature. 3 hours.
Undergraduate prerequisite: ENGL(LING) 4060/6060 and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Prose and poetry of the Old English period, exclusive of Beowulf, with emphasis on poetry. Works will be read in Old English, with supplementary translations.

ENGL 4220/6220. Beowulf. 3 hours.
Undergraduate prerequisite: ENGL(LING) 4060/6060 and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2210 or CMLT 2111 or CMLT 2212 or CMLT 2220).
The poem in the original Old English, with attention to important critical studies.

ENGL 4240/6240. Chaucer. 3 hours.
Undergraduate prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Canterbury Tales, Troilus and Criseyde, and minor poems.

ENGL 4300/6300. Elizabethan Poetry. 3 hours.
Undergraduate prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Poetry of the earlier English Renaissance, such as works by Wyatt, Surrey, Sidney, Spenser, and Marlowe, and the sonnets of Shakespeare.

ENGL 4320/6320. Shakespeare I: Selected Works. 3 hours.
Undergraduate prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
A survey of literature written by Shakespeare throughout his career.

ENGL 4330/6330. Shakespeare II: Special Topics. 3 hours.
Undergraduate prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Special topics related to Shakespeare.

ENGL 4340/6340. Renaissance Drama. 3 hours.
Undergraduate prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
English drama from 1576 to 1642, exclusive of Shakespeare, emphasizing dramatists such as Marlowe, Jonson, Webster, and Middleton.

ENGL 4350/6350. Seventeenth-Century Poetry. 3 hours.
Undergraduate prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Major English poets of the period, such as Donne, Jonson, Herbert, and Marvell.

ENGL 4400/6400. Restoration and Eighteenth-Century English Drama. 3 hours.
Undergraduate prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400)

and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Outstanding dramatists of the period: Dryden, Wycherley, Addison, Goldsmith, Sheridan, and others.

ENGL 4420/6420. Early Eighteenth-Century Prose and Poetry. 3 hours.
Undergraduate prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Poetry and prose of the earlier eighteenth century, emphasizing Addison, Steele, Defoe, Swift, and Pope.

ENGL 4440/6440. The Age of Johnson. 3 hours.
Undergraduate prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
English literature of the late eighteenth century, emphasizing Johnson, Boswell, and their group.

ENGL(AFAM)(LING) 6040. Language Use in the African American Community. 3 hours.
Prerequisite: Permission of department.
History and structure of the speech and language styles used in the African American community; examination of linguistic and cultural issues that confront the majority of African Americans; the role of the vernacular language of African Americans in society.

ENGL(LING) 6070. Middle English. 3 hours.
Prerequisite: ENGL(LING) 4000/6000 or ENGL (LING) 4060/6060 or permission of department.
The English language of the Middle English period, including the development of the language from the end of the Old English period through the transition to Modern English.

ENGL 6190. Study of the English Language. 3 hours.
Prerequisite: Permission of department.
The nature, structure, and varieties of the English language in vocabulary, grammar, pronunciation, and semantics.

ENGL 6250. Medieval Drama. 3 hours.
Prerequisite: Permission of department.
English drama from its beginnings to the opening of the public theater in 1576.

ENGL 6260. Middle English Literature. 3 hours.
Prerequisite: Permission of department.
English literature of the thirteenth, fourteenth, and fifteenth centuries, exclusive of Chaucer and the drama.

ENGL 6290. Topics in Medieval Literature. 3 hours.
Repeatable for maximum 6 hours credit.
Special topics in Medieval literature to 1500.

ENGL 6310. Spenser. 3 hours.
Prerequisite: Permission of department.
A study of The Faerie Queene, The Shepheardes Calender, and the Amoretti, with attention to Spenser's other works and his literary context.

ENGL 6360. Renaissance Prose. 3 hours.
Prerequisite: Permission of department.
Prose of the sixteenth and seventeenth centuries, such as works by More, Sidney, Bacon, Donne, Browne, and Bunyan.

ENGL 6370. Milton. 3 hours.
Prerequisite: Permission of department.
The works and times of John Milton.

ENGL 6430. The Eighteenth-Century English Novel. 3 hours.
Prerequisite: Permission of department.
The English novel from Defoe to 1800, including novels by Richardson, Fielding, Smollet, and Sterne, the Gothic novel, and the novel of purpose.

ENGL 6450. William Blake. 3 hours.
Prerequisite: Permission of department.
The works, times, and critical heritage of William Blake.

ENGL 6500. Early Romantic Literature. 3 hours.
Prerequisite: Permission of department.
Wordsworth, Coleridge, and other writers.

ENGL 6510. Later Romantic Literature. 3 hours.
Prerequisite: Permission of department.
Byron, Shelley, Keats, and other writers.

ENGL 6520. The Nineteenth-Century British Novel. 3-6 hours.
Prerequisite: Permission of department.
The development of the British novel in the nineteenth century.

ENGL 6530. Victorian Literature I. 3 hours.
Prerequisite: Permission of department.
Selected prose and poetry of the early nineteenth century.

ENGL 6540. Victorian Literature II. 3 hours.
Prerequisite: Permission of department.
Selected prose and poetry of the later nineteenth century.

ENGL 6580. Topics in Multicultural Literature. 3 hours. Repeatable for maximum 9 hours credit.
Selected topics focussing on one or more cultures and exploring a variety of literary forms with some attention to historical context and theoretical aspects of multiculturalism.

ENGL 6600. Issues in Feminist Theory and Criticism. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Study of topics and approaches in feminist criticism.

ENGL 6640. Film as Literature. 3 hours.
Prerequisite: Permission of department.
The interpretation of films, with emphasis on the relationships between motion pictures and British and American literature.

ENGL 6650. Modern Drama. 3 hours.
Prerequisite: Permission of department.
The drama of Europe and America from the realism of Ibsen and Strindberg to the present.

ENGL 6660. Twentieth-Century British Poetry. 3 hours.
Prerequisite: Permission of department.
British poetry since the 1890's.

ENGL 6670. The Twentieth-Century British Novel. 3 hours.
Prerequisite: Permission of department.
Fiction of such representative British novelists for the twentieth century as Bowen, Conrad, Forster, Joyce, Lawrence, Waugh, Woolf, and Greene.

ENGL 6680. Modern Irish Literature. 3 hours.
Prerequisite: Permission of department.
Fiction, poetry and drama of the Irish Renaissance and after.

ENGL 6700. Imperfect Unions: American Writing to 1820. 3 hours.
Prerequisite: Permission of department.
Literature of British North America and the new United States from William Bradford through the early work of Irving and Cooper. Writers may include Rowlandson, Bradstreet, Mather, Byrd, Woolman, Jefferson, Franklin, Equiano, Paine, Bartram, and Brown.

ENGL 6710. American Writing 1820-1865. 3 hours.
Prerequisite: Permission of department.
The writing that represents the achievement of American literature in the decades before the Civil War. Writers may include Emerson, Thoreau, Poe, Hawthorne, Stowe, Douglass, Melville, Whitman, and Dickinson.

ENGL 6720. American Writing 1865-1918. 3 hours.
Prerequisite: Permission of department.
The major fiction and poetry of the period, with some attention to literary movements as well as the impact of the Civil War on American literature. Writers may include Whitman, Dickinson, James, Twain, Chesnutt, Crane, Norris, Wharton, and Chopin.

ENGL 6730. American Fiction 1918-1960. 3 hours.
Prerequisite: Permission of department.
The development of ideas and forms in American fiction from the end of World War I to 1960. Writers may include Cather, Hemingway, Faulkner, Fitzgerald, Wright, Steinbeck, Porter, and Baldwin.

ENGL 6740. American Poetry 1918-1960. 3 hours.
Prerequisite: Permission of department.
Ideas and forms in American poetry from 1918 to 1960. Among the writers to be considered may be Eliot, Pound, H.D., Stein, Stevens, Moore, Williams, and Frost.

ENGL 6750. American Writing After 1960. 3 hours.
Prerequisite: Permission of department.
The ideas and artistic expression of contemporary American prose and poetry. Writers may include Heller, Morrison, O'Brien, Kincaid, Erdrich, Lowell, Plath, Sexton, Rich, Roethke, Forche, Harjo, Howe, Ashbery, Lorde, and Perlman.

ENGL(AFAM) 6770. Topics in African American Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Selected topics in African American literature, such as autobiography, the Harlem Renaissance, Gwendolyn Brooks and Richard Wright, Black American literature and aesthetics.

ENGL 6780. Southern Writing. 3 hours.
Prerequisite: Permission of department.
The literary legacy of the American South. Writers may include Byrd, Poe, Simms, Cable, Chesnutt, Glasgow, Toomer, Faulkner, Porter, Hurston, Welty, O'Conner, and Percy.

ENGL 6790. Topics in American Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Themes, literary traditions, and genres in American writing.

ENGL 6800. Topics in Forms and Craft. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Topics in and issues around the act of writing. Sample courses include The Art of Translation, The Art of the Book, The Novel Form, and Publishing and Editing.

ENGL 6810. History of Literary Criticism. 3 hours.
Prerequisite: Permission of department.
Literary theory from Plato to the early modern period, examining changing concepts of genre, style, and the social function of literature.

ENGL 6820. Contemporary Literary Theory. 3 hours.
Prerequisite: Permission of department.
Major themes and movements in twentieth-century criticism.

ENGL 6830. Topics in Criticism and Theory. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
A current critical problem, school, or approach, such as structuralism, poststructuralism, feminism, psychoanalysis, Marxism, New Historicism, gay and lesbian studies, postmodernism, or cultural studies.

ENGL 6840. Folklore Studies. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
One or more folk groups, folklore genres, or topics concerning folklore.

ENGL 6850. Topics in Multicultural Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Selected topics focusing on one or more cultures and exploring a variety of literary forms with some attention to historical context and theoretical aspects of multiculturalism.

ENGL 6860. History of Rhetoric and Textuality. 3 hours.
Prerequisite: Permission of department.
The rhetorical tradition from antiquity to the present, emphasizing the development of writing and textuality.

ENGL 6870. Rhetoric and Textual Practice. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
The relationship between rhetorical theory and the practice of writing, both literary and non-literary.

ENGL 6880. College Composition Theory and Pedagogy. 3 hours.
Prerequisite: Permission of department.
Current theories of writing pedagogy and strategies for teaching writing at the college level. Topics include the composing process, invention, revision, and assessment of writing.

ENGL 6888. Seminar in Literary Computing. 3 hours.
Not open to students with credit in ENGL 8888.
Tools, procedures, and theoretical concerns of computer-enabled research and pedagogy in literary study.

ENGL 6890. Bibliography and Methods of Research. 3 hours.
Prerequisite: Permission of department.
Bibliographical analysis and description and the study of research materials and methods.

ENGL 6900. Practicum in Electronic Textuality. 1-3 hours.
Electronic text resources; management of department-issued individual Unix-shell account (files; file transfer; telnet; mail; newsgroups); use of various browsers on the World-Wide Web; home access; elementary text manipulation (concording); basic text and image editing; fundamentals of "markup" language (HTML, SGML).

ENGL 6910. Apprenticeship in College English. 1 hour. Repeatable for maximum 3 hours credit.
An apprenticeship in the teaching of freshman composition and of sophomore literature.

ENGL 6911. Practicum in Teaching College Composition. 3 hours.
Prerequisite or corequisite: ENGL 6910.
Provides intensive training in composition pedagogy. Topics include effective student conferences, grading strategies, writing workshop and peer editing techniques, revision, and topic development. Considers the different demands of teaching composition in an expository writing class and a literature-based writing class.

ENGL 7000. Master's Research. 3-6 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ENGL 7300. Master's Thesis. 3-6 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ENGL 8100. Seminar in English Language Studies. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Special topics in English linguistics.

ENGL 8200. Seminar in Medieval Topics. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Special topics in Medieval literature.

ENGL 8300. Seminar in Literature of the English Renaissance. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Special topics in English literature from More through Milton. Topics will vary.

ENGL 8400. Seminar in Eighteenth-Century Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Swift, Pope, Johnson, Fielding, or Blake.

ENGL 8500. Seminar in English Romantic Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A major writer or special topics of the period.

ENGL 8550. Seminar in Victorian Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Tennyson, Browning, and Arnold.

ENGL 8600. Seminar in Modern Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
An author or problem in twentieth-century British or American literature.

ENGL 8700. Seminar in American Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A research course on special problems in American literature.

ENGL 8710. Major American Writers. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A detailed examination of the life and works of one or two American authors.

ENGL(AFAM) 8720. Seminar in African American Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A detailed examination of selected forms and ideas in the African American tradition.

ENGL 8750. Seminar in Southern Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Special problems in Southern literature.

ENGL 8800. Seminar in Creative Writing. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Advanced instruction in the craft of writing.

ENGL(CMLT) 8850. Seminar in Criticism and Theory. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A problem in structuralism, poststructuralism, feminism, psychoanalysis, Marxism, New Historicism, gay and lesbian studies, postmodernism, postcolonialism, or cultural studies; or of a major literary theorist.

ENGL 8900. Current Issues in Rhetorical Theory. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Study of contemporary rhetorical theory and its relation to literary criticism and English composition.

ENGL 8960. Directed Reading. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Independent graduate study, under faculty supervision, in special topics not available in scheduled courses. Topics must be approved by the Graduate Committee in English.

ENGL 9000. Doctoral Research. 3-6 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ENGL 9300. Doctoral Dissertation. 3-6 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Environmental Ethics

Peter Hartel, *Graduate Coordinator,* 542-0898
(Plant Sciences Building)

Please see the Index for information on the certificate program in environmental ethics. The courses having an environmental ethics prefix are listed below.

EETH 4020/6020. Readings in Environmental Ethics. 1-3 hours. Repeatable for maximum 3 hours credit.
Undergraduate prerequisite: Permission of department.
Discussion of selected books and articles pertaining to environmental ethics.

EETH(AESC) 4190/6190. Agricultural Ethics. 1 hour. 2 hours lab per week.
Ethical issues in agriculture. Topics include animal rights/animal welfare, agriculture as a business/agriculture as a way of life, sustainable agriculture, (bio)technology, migrant farm workers, foreign aid, world hunger, and related topics.

(EETH)ECOL 4200/6200. Ecological Values. 4 hours.
Undergraduate prerequisite: Permission of department.
A general ecology course for non-science majors, which is a core course for the environmental ethics certificate. Based on lectures, readings, and laboratories. The course is designed to examine ecological phenomena from global patterns to individual interactions.

(EETH)PHIL 4220/6220. Environmental Ethics. 3 hours.
Undergraduate prerequisite: PHIL 2200 or any 3000-level PHIL course or permission of department.
Major professional and nonprofessional writings in the field of environmental ethics.

(EETH)PHIL 4250/6250. Technology and Values. 3 hours.
Undergraduate prerequisite: Any 3000-level PHIL course or permission of department.
Technology in its broadest human context, with emphasis on the mutual influence between means and ends and the impact of technology on shaping the beliefs and attitudes of a civilization. Includes alternative assessments of technology and illustrates with specific crucial issues of our time.

EETH(JURI) 5870/7870. Environmental Dispute Resolution. 2 hours.
Conflict management, anatomy of negotiation, planning and conduct of negotiations, and resolving multiparty environmental disputes.

EETH 6000. Environmental Ethics Seminar. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Seminars in environmental ethics. Topics range from animal rights/animal welfare to ecofeminism and deep ecology.

EETH 8010. Graduate Research. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research project under the direction of a faculty member done independently of regularly scheduled classes.

Genetics

John F. McDonald, *Head*
James Hamrick, *Graduate Coordinator,*
542-1826
(Life Sciences Building)

The Department of Genetics offers graduate programs leading to the MS and PhD degrees. The department is particularly strong in the areas of recombinant DNA technology, gene regulation, prokaryotic molecular genetics, plant molecular biology, mammalian genetics, evolutionary genetics, and population genetics. After a student is admitted, a faculty advisory committee is appointed to recommend a program of study based on the individual student's academic background and research interests. A master's degree is not required for entrance into the doctoral program, and students without a master's degree are encouraged to enter the doctoral program directly.

Faculty members associated with three interdepartmental programs in the Division of Biological Sciences—in the RTG for Prokaryotic Diversity, in Cell and Developmental Biology and the Center for Metalloenzyme Studies—have close ties with the Department of Genetics. Graduate course offerings in these interdepartmental programs are available to students in the Department of Genetics and serve to complement the graduate course offerings in genetics.

Physical facilities available for research include all modern equipment and facilities necessary for research in the various areas of genetics. Special on-campus facilities include a DNA and protein sequence and synthesis facility, a molecular marker analysis facility, a complete electron and confocal microscopy laboratory, controlled-environment equipment, equipment for radioisotope studies, a special fermentation facility, a monoclonal antibody production facility, and extensive computer facilities. Cooperative arrangements for joint research exist with such off-campus facilities as the Russell Agricultural Research Center, the Yerkes Primate Center, the Sapelo Island Marine Institute, the Savannah River Ecology Laboratory, and the Oak Ridge National Laboratory.

Prospective students should address inquiries to the Graduate Coordinator, Department of Genetics. E-mail: gradapp@arches.uga.edu. Our World Wide Web address is: http://www.genetics.uga.edu. Graduate students in the department are eligible for a number of University fellowships and research and teaching assistantships. Applicants for the doctoral program will also be considered for traineeships provided by a Public Health Service Institutional National Research Service Award. The deadline for application for most fellowships and assistantships is January 1, and students are normally only admitted at the beginning of the fall semester.

GENE 4200/6200. Advanced Genetics. 3 hours.
Undergraduate prerequisite: GENE(BIOL) 3200 or PGEN 3580.
Prokaryotic, fungal, and mammalian genetic systems which form the basis of our understanding of molecular genetics. Techniques used in the analysis of the structure and function of viral and eukaryotic genomes.

GENE(BIOL) 4600/6600. Evolutionary Biology. 3 hours.
Undergraduate prerequisite: BIOL 1108-1108L.
An introduction to the processes of evolution. Topics include population genetics, speciation, systematics, coevolution, chemical origin of life, history of life, geological record, and evolution of humans.

GENE 7000. Master's Research. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

GENE 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

GENE 8070. Research Seminar in Population, Evolutionary, and Molecular Genetics. 1-3 hours. Repeatable for maximum 12 hours credit.
Seminar focused on current research in population, evolutionary, and molecular genetics.

GENE 8080. Current Literature In Population, Evolutionary, and Molecular Genetics. 1-3 hours. Repeatable for maximum 10 hours credit.
Journal Club examining the current literature on selected topics in population, evolutionary, and molecular genetics.

GENE 8150. Fundamentals of Evolutionary Genetics. 3 hours.
Not open to students with credit in GENE 8120 or GENE 8130.
Prerequisite: GENE(BIOL) 3200.
An introduction to evolutionary genetics combining both mathematical theory and experimental and field research and covering the basics of population genetics, evolutionary ecology, quantitative genetics, and molecular evolution.

GENE 8160. Evolutionary Genetics Theory. 3 hours.
Prerequisite: (GENE 8150 and MATH 2200 and STAT 6210) or permission of department.
An intermediate treatment of evolutionary genetics theory with a rigorous treatment of the major evolutionary processes. The course integrates mathematical models and critical hypothesis tests for designing experimental studies and understanding both current and classical literature.

GENE 8500. Research Methods in Population Biology. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Methods of data analysis and modeling techniques used in Genetics research.

GENE 8600. Genetics Seminar. 1 hour. Repeatable for maximum 4 hours credit. 1 hour lab per week.
Prerequisite: Permission of department.
Seminars emphasizing advances in genetics, molecular genetics, and molecular biology.

GENE 8650. Responsible Science. 1 hour.
Prerequisite: Permission of department.
Ethical issues in genetics, how scientists work, social mechanisms in science, scientific misconduct, conflicts of interest, and other issues related to ensuring integrity of the research process.

GENE 8700. Seminar in Population Genetics. 1 hour. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Evaluation of current literature in population genetics.

GENE 8830. Advanced Topics in Molecular Genetics. 1-3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: BCMB 8020 or GENE 8930 or permission of department.
Genetic regulatory mechanisms, extrachromosomal genetics, molecular aspects of recombination mechanisms, ribosome synthesis and control, plasmic genetics, and cytogenetics.

GENE 8840. Advanced Topics in Population Genetics. 1-3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Advanced aspects of ecological and population genetics.

GENE 8880. Seminar in Research Communication. 1 hour. Repeatable for maximum 12 hours credit.
Student seminars on research in progress and research proposals.

GENE 8900. Research Techniques in Genetics. 3 hours. Repeatable for maximum 6 hours credit. 15 hours lab per week.
Prerequisite: Permission of department.
Techniques employed in genetics research taught by student participation in the research projects of Genetics faculty.

GENE(BCMB) 8910. DNA Modeling. 2 hours. 1 hour lecture and 3 hours lab per week.
The building of space filling models to help students understand the structure/function relationships of RNA and DNA. Computer modeling approaches will also be taught.

GENE 8920. Nucleic Acids. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: BCMB 8020 or permission of department.
Structure and function of nucleic acids. The isolation, structure, chemical analysis, hybridization, enzymology, and replication of DNA and RNA, nucleic acids enzymes, protein-nucleic acid interactions and recombinant DNA technology.

GENE 8930. Advanced Molecular Genetics. 3 hours.
Prerequisite: BCMB 8010 or GENE 8920.
The molecular mechanisms of gene action in procaryotes and eucaryotes, including discussions of chromosome structure and replication, mutagenesis and DNA repair, recombination mechanisms, transposition, transcriptions, and translation controls.

GENE 8950. Molecular Evolution. 3 hours.
Prerequisite: GENE 4200/6200 or permission of department.
The facts and theories of molecular evolution. Topics include protein evolution, evolution of development, evolution of genome structure, and critical evaluation of contemporary evolutionary theories.

(GENE)(BCMB)BTNY(PATH) 8960. Genetics of Yeast and Filamentous Fungi. 3 hours.
Prerequisite: Permission of department.
Classical genetics and molecular biology of budding yeast, fission yeast, and model filamentous fungi. Includes life cycle, cell cycle, cytoskeleton, mating types, morphogenesis, pathogenesis, mutant screens, and cloning strategies.

GENE 8970. Metazoan Genetics. 2 hours.
Prerequisite: GENE 8930 or permission of department.
Genetic analysis of multicellular animals. Topics include classical and modern genome mapping strategies, regulation of development of complex organ systems, viral genetics, and immunogenetics.

GENE 9000. Doctoral Research. 1-10 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

GENE 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Geography

Vernon Meentemeyer, *Head*
Elgene Box, *Graduate Coordinator* 542-2369
(GG Building)

The Department of Geography offers graduate programs leading to the MA, MS, and PhD degrees with specialization in physical and human geography and in geographic information science (GIS). The department's strengths are in biogeography, geomorphology, Quaternary studies, geoarchaeology, and climatology; social theory, labor studies, political economy, and gender; population, urban, economic, social, and development geography; and cartography, photogrammetry, remote sensing, and GIS.

The department has strong ties with the College of Environment and Design; the Center for Archaeological Sciences; the Marine Sciences, Asian Studies, Women's Studies, and African Studies programs; the Humanities Center; the Institute of Government; the Terry College of Business; and the Institute for Behavioral Research. As a member of the Inter-University Consortium for Political and Social Research, the University supports a host of resources and services for social science research. Housed in the Department of Geography is the Center for Remote Sensing and Mapping Science (CRMS), which undertakes interdisciplinary research projects requiring the development of image and map data and their processing technologies, for applications in the physical, biological, and mapping sciences.

More than sixty graduate students from the USA and overseas are currently in residence. The MA and MS degrees require 7 core hours and a minimum of 18 elective hours, in addition to 6 hours of thesis writing. Programs of study tailored for either the MA or MS degree are designed in consultation with the student's advisory committee. Normally, students with primary interests in physical geography or geographical techniques pursue the MS degree, whereas students with primary interests in human geography pursue the MA degree. For the PhD, the department requires a minimum of 30 credit hours (including 4 core hours if not already taken in the MA or MS degree) and either a reading knowledge of one foreign language or credit for two additional techniques courses.

Geography has excellent teaching and research facilities in a building shared with the Department of Geology. The faculty and graduate students have available to them a number of laboratory spaces. The Geomorphology Laboratory, primarily designed for standard wet-chemical and mechanical analyses of soil, sediment, and plant materials, includes a separate work area with PCs, balances, and microscopes. The Plant Microfossil Laboratory is designed principally for the extraction of pollen grains from sediments and includes a separate microscope facility. The TL/OSL Dating Laboratory, a state-of-the-art facility that can be used to date sediments and archaeological materials, has a RISØ TL/OSL - DA - 15 glow oven/sample changer equipped with a blue light OSL attachment. Other equipment includes a low-level beta counter, three alpha counters, and alpha and beta irradiators. The Tree-Ring Laboratory has a fully automated stage and computer-controlled microscope imaging system for measuring and analyzing tree cores. The Climatology Research Laboratory (CRL) includes multiple UNIX and PC workstations with software packages for climatological analysis. CRL also maintains a NOAAport satellite receiver of real-time meteorological observations, radar imagery, and GOES imagery. Additionally, CRL operates an HPPT satellite receiving station ingesting AVHRR imagery. A variety of microclimatological instrumentation is also available for student use.

In addition to a word processing facility for graduate students, the department maintains separate laboratories for introductory GIS and cartography; advanced GIS, remote sensing and photogrammetry; and spatial analysis and economic geography. Each laboratory is equipped with state-of-the-art computers, both PCs and workstations, on a local area network with digitizers, scanners, printers, and plotters with current software in all areas. CRMS also maintains a complex computer network and extensive software for remote sensing, GIS, and photogrammetric applications. The department owns three vehicles for regional travel and field trips. All graduate students are provided office space.

The department's website is http://www.ggy.uga.edu. For further information, please e-mail us at geoggrad@uga.edu.

GEOG 4920/6920. Special Problems in Area Analysis. 1-3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: Permission of department.
Independent research and readings on geographical topics by arrangement with specific faculty.

GEOG 7000. Master's Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

GEOG 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

GEOG 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

GEOG 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Human and Regional Geography

GEOG 4610/6610. Location Analysis. 3 hours.
Undergraduate prerequisite: GEOG 3620 or permission of department.
The geography of retail activity and consumer demand. Principles of locational decision-making for retail and service firms.

GEOG 4620/6620. Advanced Economic Geography. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GEOG 3620 or permission of department.
Advanced theoretical and empirical issues in economic geography, such as impacts of globalization, regional development, trade patterns, and labor issues. Topics will vary.

GEOG 4630/6630. Advanced Urban Geography. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GEOG 3630 or permission of department.
Urban growth and approaches to urban analysis. Urbanization processes within urban systems, including economic, demographic, social, and technological change.

GEOG 4640/6640. Population Geography. 3 hours.
Undergraduate prerequisite: GEOG 1101-1101D or permission of department.
The distribution of world population and an introduction to population data and to basic demographic techniques. Topics include theories of population change, fertility, mortality, migration, population policy, and population-environment relationships.

GEOG 4650/6650. Industrial Geography. 3 hours.
Undergraduate prerequisite: GEOG 3620 or permission of department.
The regional basis of economic growth and industry case studies. The impact of product and process innovation, entrepreneurship, globalization, and the service economy on the spatial distribution of industry.

GEOG 4660/6660. Urban and Regional Development. 3 hours.
Undergraduate prerequisite: GEOG 1101-1101D or permission of department.
Regional development and the implications of globalization to regional economies of the industrialized countries. Discussions on the changing dynamics of international competition and the reorganization of production. Contemporary trends in regional economic development policy, including high technology and service-sector development.

GEOG 4670/6670. Geography of Development. 3 hours.
Undergraduate prerequisite: GEOG 1101-1101D or permission of department.
Geographical aspects of Third World development, including population growth, migration, industrialization, trade, and foreign aid. The spatial characteristics of economic development are viewed at the conceptual level and implications for policy discussed.

GEOG 4680/6680. Gender and Geography. 3 hours.
Undergraduate prerequisite: GEOG 1101-1101D or WMST 1110-1110D or permission of department.
Relationships between gender and globalization. Women and development, industrialization, and third world regions.

GEOG 4710/6710. Geography of Sub-Saharan Africa. 3 hours.
Undergraduate prerequisite: GEOG 1101-1101D or permission of department.
Geographic and socio-economic issues that face sub-Saharan economies into the twenty-first century. Emphasis on the physical landscape, environmental conditions, social and cultural distributions, and strategies and theories of economic development.

GEOG 4720/6720. Geography of Latin America. 3 hours.
Undergraduate prerequisite: GEOG 1101-1101D or permission of department.
The geography of Latin America, including physical, cultural, and economic characteristics of different regions. Prospects for expansion of settlement, development of resources, and growth of industries.

GEOG 4730/6730. Geography of China. 3 hours.
Undergraduate prerequisite: GEOG 1101-1101D or permission of department.
The physical and human geography of contemporary China. Emphasis is on modernization and development of agriculture, industry, and transportation within the context of China's resource base and large population.

GEOG 4740/6740. Geography of East and Southeast Asia. 3 hours.
Undergraduate prerequisite: GEOG 1101-1101D or permission of department.
The physical and human geography of East and Southeast Asia. Major focus on resources, land utilization, population characteristics and distributions as they re-

late to economic and political problems. Emphasis is on Japan, Korea, Indonesia, Philippines, and Indo-China.

GEOG 4750/6750. Geography of Europe. 3 hours.
Undergraduate prerequisite: GEOG 1101 or permission of department.
Geographic issues that affect Europe into the twenty-first century. Emphasis on current economic, social, and political controversies in Europe, as well as the historical context for these.

GEOG 8620. Seminar in Economic Geography. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GEOG 4620/6620 or permission of department.
Empirical and theoretical issues in contemporary economic geography. Specific topics vary.

GEOG 8630. Seminar in Urban Geography. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GEOG 4630/6630 or permission of department.
Topics and research problems in urban geography. Topics may vary.

GEOG 8640. Seminar in Population Geography. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GEOG 4640/6640 or permission of department.
Theoretical and empirical issues in population geography. Topics vary, and include geographic aspects of immigration, internal migration, fertility, mortality, and age structure.

GEOG 8660. Seminar in Regional Development. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GEOG 4660/6660 or permission of department.
Topics on regional development and effects of globalization on regional economies of industrialized countries. Specific topics may vary.

GEOG 8670. Seminar in the Geography of Development. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GEOG 4670/6670 or permission of department.
Research topics related to the geographical aspects of Third World development. Topics may vary.

GEOG 8690. Directed Problems in Human Geography. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Problems in advanced topics in human geography. Topics may vary.

GEOG 8710. Seminar in Regional Geography. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research topics on the geography of a selected region; data sources and methodologies for research. Regions may vary.

GEOG 8810. Seminar in Human-Environment Relationships. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Problems, methods, and techniques in human-environment relationships and economic development, including decision-making strategies in resource exploitation.

GEOG 8900. Proseminar in Geography. 1 hour.
Prerequisite: Permission of department.
Introduction to the graduate program and the departmental faculty, including major foci of research activities and directions within the department.

GEOG 8910. Seminar in Geographic Thought and Methods. 3 hours.
Prerequisite: Permission of department.
Development of geographical philosophy and methods; contemporary methodological concepts and problems. Required for all graduate majors.

GEOG 8920. Seminar in Social Theory in Geography. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Contemporary debates concerning space and society. Epistemological and ontological debates within geography relating to the spatial constitution of society and the social production of geographical knowledge.

Physical Geography

GEOG 4020/6020. Fluvial Geomorphology. 3 hours.
Undergraduate prerequisite: GEOG 1111 or GEOG 1113 or permission of department.
Landforming effects of surface-water movement with emphasis on surface-water hydrology, streamflow mechanics, floods, sediment transport and storage, and landform evolution. Field trips included.

GEOG 4030/6030. Geomorphology and Environmental Change in Karst and Arid Environments. 3 hours.
Undergraduate prerequisite: GEOG 1113 or permission of department.
Weathering, erosional and depositional processes, and landforms in karst and arid areas. Formation of sinkholes, sinking streams, caves, springs, sand dunes, playas, and yardangs. Geoarchaeological and other evidence on the nature of past environments, including

dating cave and aeolian sediments. Field trips included.

GEOG 4040/6040. Global Environmental Change During the Quaternary. 3 hours.
Undergraduate prerequisite: GEOG 3010 or permission of department.
Chronology and geomorphic, isotopic, and palynological evidence of Quaternary paleoclimates. The effects of past climatic changes upon present landscapes, historic short-term fluctuations in temperature and precipitation, and possible explanations for climatic change are emphasized.

GEOG 4050/6050. The Environment of Egypt. 6 hours.
Undergraduate prerequisite: GEOG 1111 or GEOG 1113 or GEOG 1125 or GEOL 1121 or GEOL 1250-1250L or GEOL 2120 or permission of department.
Graduate prerequisite: GEOG 3010 or two of the following: GEOG 1111 or GEOG 1113 or GEOG 1125 or GEOL 1121 or GEOL 1250-1250L or GEOL 2120 or permission of department.
Introduction to the landforms, history, and environmental problems of Egypt focusing on the Nile Valley, the oases in the Western Desert, and the Sinai. This is a Maymester field course that will be taught in Egypt with the collaboration of Geography faculty at Ain Shams University, Cairo.

GEOG 4060/6060. Field and Laboratory Methods in Physical Geography. 3 hours.
Undergraduate prerequisite: GEOG 3010 or GEOG 3110 or GEOG 3210 or permission of department.
Methods in measurement, observation, recording and synthesis of field data in physical geography. Students conduct field research and present oral and written reports (with maps) of findings.

(GEOG)ENGR 4111/6111-4111L/6111L. Atmospheric Thermodynamics. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MATH 2500 and PHYS 1212-1212L.
Undergraduate prerequisite or corequisite: MATH 2700 and (CHEM 1211 or CHEM 1311H or CHEM 1411) and (CSCI 1301-1301L or ENGR 1140).
An introduction to atmospheric thermodynamics with emphasis on the first and second laws of thermodynamics, equation of state for gases, moisture variables, adiabatic and diabatic processes of dry and moist air, phase changes of water, and atmospheric statics.

GEOG(ENGR) 4112/6112. Atmospheric Dynamics. 3 hours.
Undergraduate prerequisite: (GEOG 1112 and GEOG 1112L and MATH 2200) or permission of department.
A quantitative investigation of large-scale atmospheric motion. Equations of motion are derived from basic physical laws. Concepts of vorticity, quasi-geostrophic theory, and general circulation are addressed.

GEOG 4120/6120. Synoptic Meteorology/ Climatology. 3 hours.
Undergraduate prerequisite: GEOG 3120-3120L or permission of department.
Theory and observations to understand mid-latitude weather systems. Focus is on application of quasi-geostrophic theory in weather forecasting. Analysis and interpretation of weather maps and numerical models. Development and life cycle of cyclones, fronts, and jet streams.

GEOG 4140/6140. Satellite Meteorology/ Climatology. 3 hours.
Undergraduate prerequisite: (GEOG 1111 and GEOG 1111L) or (GEOG 1112 and GEOG 1112L) or (GEOG 2110H and GEOG 2110L) or permission of department.
Application of satellite remote sensing in meteorology and climatology. Applications include clouds, atmospheric water vapor and precipitation, the Earth's radiation budget, sea and land surface temperatures.

GEOG 4150/6150. Physical Climatology. 3 hours.
Undergraduate prerequisite: GEOG 3110 or GEOG 3120-3120L or GEOG 4140/6140 or GEOG 4160/ 6160 or ENGR(GEOG) 4161/6161-4161L/6161L or GEOG(ENGR) 4112/6112 or permission of department.
Advanced, quantitative study of Earth's physical climate. Includes global energy balance, surface-atmosphere energy exchanges, surface hydrology and water budget at various temporal and spatial scales. Methods of measuring and modeling are discussed. Case studies are used to illustrate how the physical processes govern the climate system.

GEOG 4160/6160. Applied Climatology. 3 hours.
Undergraduate prerequisite: GEOG 3110 or permission of department.
The interaction of climate with organisms, communities, and ecosystems. Mechanisms of heat flow, radiation exchanges and water vapor flux; statistical methods used with climatic data; bioclimatic methods used to improve environmental impact assessment; and case studies that demonstrate the role of climate in ecosystem function.

(GEOG)ENGR 4161/6161-4161L/6161L. Environmental Microclimatology. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: (MATH 2500 or MATH 2700) and PHYS 1211-1211L and [(BIOL 1103 and BIOL 1103L) or (BIOL 1104 and BIOL 1104L) or

BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L) or (BTNY 1220 and BTNY 1220L)].
An introduction to the interactions between the biosphere and atmosphere. Energy, moisture, and carbon exchange in the soil-plant-atmosphere continuum with applications to managed and natural environments. The impact of weather and climate on humans and domesticated animals. Elementary turbulent exchange theory will be introduced.

(GEOG)ENGR 4180/6180. Special Topics in Atmospheric Sciences. 3 hours.
Undergraduate prerequisite: Permission of department.
Special interest topics in atmospheric sciences.

GEOG(BTNY) 4220/6220. Ecological Biogeography. 3 hours.
Undergraduate prerequisite: GEOG 1111 or ECOL(BIOL) 3500-3500L or permission of department.
Patterns of plant distribution in contemporary landscapes and underlying processes, including vegetation dynamics, disturbance ecology, biogeomorphology, dendrochronology, and environmental history.

GEOG(BTNY) 4240/6240. Plant Geography. 3 hours.
Undergraduate prerequisite: GEOG 3210 or ECOL(BIOL) 3500-3500L or permission of department.
Biogeography and ecology of the world's main terrestrial biomes. Includes world bioclimatic zonation, plant-geographic processes, other physical environmental factors, plant functional roles and types, vegetation dynamics, response to disturbance, and potential natural vegetation. Emphasis on global scale, with secondary emphasis on North America.

GEOG 4290/6290. Neotropical Mountain Geoecology. 6 hours. 3 hours lecture and 6 hours lab per week.
Not open to students with credit in CRSS(HORT)(ANTH) 4930/6930.
Undergraduate prerequisite: GEOG 3290.
Study of how the mountain ecological principles apply in a geographical setting in tropical America. Review of geological, edaphic, hydrological, biogeographical, ethnographical, and ecological processes in the shaping of mountain cultures in tropical America, with case studies in Ecuador. This course will be taught as a practicum in Quito, Ecuador with collaboration of the Pan American Center for Geographical Studies and Research for travel in Ecuador.

GEOG 4810/6810. Conservation Ecology and Resource Management. 3 hours.
Undergraduate prerequisite: GEOG 1125-1125D or GEOG 2250H-2250D or permission of department.
Ecological and economic analysis of human use of global and regional resources, emphasizing ecological requirements, sustainable use, and holistic decision-making. Topics include ecosystem dynamics, functional biodiversity, landscape management, socioeconomic traps, global change, and ecological restoration.

GEOG 8020. Seminar in Geomorphology. 3 hours.
Repeatable for maximum 9 hours credit.
Prerequisite: GEOG 4020/6020 or GEOG 4030/6030 or permission of department.
Advanced problems in geomorphology and physiography. Topics may vary.

GEOG 8040. Seminar in Quaternary Paleoenvironments. 3 hours.
Prerequisite: GEOG 4040/6040 or permission of department.
Methods used in reconstructing the hydrological and vegetation characteristics of former environments. Emphasis is on the analysis of cave, fluvial, and marine sediments. The changing Quaternary environments of North America, Europe, and Africa are discussed in detail. Specific topics may vary.

GEOG 8120. Seminar in Climatology. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: GEOG 4120/6120 or GEOG 4140/6140 or GEOG 4160/6160 or permission of department.
Advanced topics in physical climatology such as climate change, microclimatology, urban climatology or synoptic climatology. Specific topics may vary.

GEOG 8220. Seminar in Biogeography. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: GEOG(BTNY) 4220/6220 or GEOG (BTNY) 4240/6240 or permission of department.
Advanced topics and research trends in biogeography.
Specific topics may vary.

GEOG 8240. Seminar in Geoecology. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Geographical ecology, with specific topics ranging from landscape to global scale (e.g., landscape ecology, regional ecology, conservation problems, biosphere-atmosphere interactions, global ecology and global change).

GEOG 8260. Seminar in Environmental Geography. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Advanced topics and research trends in environmental geography. Specific topics may vary.

GEOG 8290. Directed Problems in Physical Geography. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Advanced problems in physical geography. Topics vary.

Geographic Techniques and Methods

GEOG 4300/6300. Introductory Spatial Analysis. 3 hours.
Undergraduate prerequisite: GEOG 2300 or permission of department.
Descriptive and inferential techniques used in quantitative geographic analysis. Probability distributions, sampling techniques, parametric and nonparametric inference, analysis of variance, spatial autocorrelation measures and regression procedures. Applications of statistical methods to spatial analysis and geographic research design. Exercises develop knowledge of statistical programming with computer software.

GEOG 4305/6305. Introduction to Qualitative Research Methods. 3 hours.
An introduction to qualitative research problems in geography and to the major modes of qualitative data collection, analysis, and representation. Students will gain practical experience with interviews, focus groups, archival research, and observation techniques.

GEOG 4310/6310-4310L/6310L. Cartographic Design and Reproduction. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: GEOG 3510-3510L or permission of department.
Design, examination of cartographic literature, map production methods, and their effects on design. Practical applications of desktop publishing, page layout with specific emphasis on state atlas design, map-narrative interactions, four color map reproduction, and photo-cartographic techniques.

GEOG 4330/6330-4330L/6330L. The Use and Interpretation of Aerial Photographs. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: Permission of department.
Principles and techniques of extracting descriptive and metric information about the environment from aerial photographs acquired in analog and digital forms. Applications emphasize planimetric mapping and interpretation of physical and cultural landscapes. A term project using the techniques is required.

GEOG 4350/6350-4350L/6350L. Remote Sensing of Environment. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: GEOG 4330/6330-4330L/6330L or permission of department.
Remote sensing with emphasis on aerospace applications in the natural sciences. Fundamental properties of the electromagnetic spectrum and remote sensing devices such as multispectral cameras, thermal infrared line scanners, and television and radar imaging systems.

GEOG 4370/6370-4370L/6370L. Introduction to Geographic Information Systems. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CSCI 1301-1301L or sophomore standing or permission of department.
Principles and applications of geographic information systems (GIS). Examines the nature and accuracy of spatially referenced data, as well as methods of data capture, storage, retrieval, visualization, modeling, and output using one or more GIS software packages.

GEOG(CRSS) 4375/6375. GIS Applications in Agriculture. 4 hours.
Undergraduate prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or ENGR 1120 or GEOG 4330/6330-4330L/6330L or GEOG 4370/6370-4370L/6370L.
An exploration of the uses of Geographic Information Science (GIS) technology in agricultural applications. Basics of Global Positioning Systems (GPS) for location reference, GIS for field investigation, and remote sensing for crop and soil evaluation will be explored. Construction of GIS databases for precision farming and watershed management applications will be required.

GEOG 4410/6410-4410L/6410L. Cartographic Visualization Methods. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: GEOG 3510-3510L or permission of department.
Theory and application of computer technology in the preparation of thematic maps and graphics. Emphasis on the creation, analysis, and display of statistical surfaces. Students explore trends in cartographic visualization methods, including interactive and animated mapping techniques.

GEOG 4430/6430-4430L/6430L. Advanced Photogrammetry. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: GEOG 4330/6330-4330L/6330L or permission of department.
Theories of analytical and digital (soft copy) photogrammetry as applied to topographic mapping. Topics include refinement of photographic measurements,

coordinate transformations, stereoscopic parallax, collinearity equations, aerial triangulation, orthophotography, and digital image correlation.

GEOG 4470/6470-4470L/6470L. Geographic Analysis and Geographic Information Systems. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: (GEOG 4300/6300 and GEOG 4370/6370-4370L/6370L and CSCI 1302) or permission of department.
Geographic analytical methods and implementation. Theory and concepts of spatial analysis. Description, reduction, and comparison of point, line, area, and volumetric geographic data sets. Implementation and limitation of geographic information systems.

(GEOG)(ANTH)CRSS(ECOL)(HORT) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Undergraduate prerequisite: Permission of department.
Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

(GEOG)(ANTH)CRSS(ECOL)(HORT) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3-6 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in CRSS(HORT)(ANTH) 4940/6940.
Prerequisite: CRSS(HORT)(ANTH) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.

GEOG 6990. Internship in Geographic Information Science. 2 hours.
Prerequisite: GEOG 4370/6370-4370L/6370L.
Placement of students in an outside private or governmental agency where they use geographic information science to solve practical problems relevant to the agency's mission. Internship assignments will be developed in consultation with a faculty supervisor or the Graduate Coordinator for Geographic Information Science.

GEOG 8300. Multivariate Techniques in Geography. 3 hours.
Prerequisite: GEOG 4300/6300 or permission of department.
Application of multivariate statistical procedures to research problems in geography, with emphasis on peculiarities of such applications. Spatial autocorrelation, areal aggregation, modifiable areal unit problem, spatial interpolation, and trend surfaces are investigated with statistical and GIS software packages.

GEOG 8305. Seminar in Qualitative Research Methods. 3 hours.
Readings address the purpose, scope, and procedures of qualitative research in human geography. Principle themes: a) situating qualitative research, b) epistemological stances, c) strategies of inquiry/methodologies, d) research methods, and e) representing qualitative research. Students will engage in theoretical debates about rigor, representation, and implications of qualitative research.

GEOG 8350. Remote Sensing with GIS Applications. 3 hours.
Prerequisite: (GEOG 4350/6350-4350L/6350L and GEOG 4370/6370-4370L/6370L) or permission of department.
Mapping datums, coordinate systems, and accuracy requirements for geographic information systems (GIS). Global positioning system (GPS), softcopy photogrammetry, and digital image processing techniques for GIS database construction. GIS modeling for environmental studies. Includes the use of various software packages.

GEOG 8390. Directed Problems in Quantitative Geographic Methods. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Topics in statistical analysis of geographic data and geographic modeling.

GEOG 8450. Problems in Remote Sensing of Environment I. 3 hours.
Prerequisite: GEOG 4350/6350-4350L/6350L or permission of department.
Advanced problems in photointerpretation, photogrammetry and remote sensing. Topics may vary. Emphasis on research and applications.

GEOG 8510. Seminar in Cartography. 3 hours.
Prerequisite: GEOG 4310/6310-4310L/6310L or GEOG 4410/6410-4410L/6410L or permission of department.
Special problems in the application of cartography. Emphasis on problems involving map design and production, computer graphics, map perception, cartographic visualization, and map animation.

GEOG 8530. Advanced Topics in the Use and Interpretation of Aerial Photographs. 3 hours.
Prerequisite: GEOG 4330/6330-4330L/6330L or permission of department.
The extraction of quantitative and qualitative information from aerial photographs, with emphasis on appro-

priateness of various approaches and on means of improving interpretation accuracy. Includes applications involving physical, human, and regional geography.

GEOG 8550. Problems in Remote Sensing of Environment II. 3 hours.
Prerequisite: GEOG 4350/6350-4350L/6350L or permission of department.
Advanced problems in photointerpretation, photogrammetry, and remote sensing. Topics may vary. Emphasis on research and applications.

GEOG 8570. Seminar in Geographic Information Systems. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: GEOG 4370/6370-4370L/6370L and permission of department.
Problems in geographic information systems, including methods and techniques and the application to specific topical areas.

GEOG 8590. Directed Problems in Geographic Techniques. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Topics in mapping sciences, such as cartography, airphoto interpretation, remote sensing, photogrammetry, and geographic information systems.

Geology

Susan T. Goldstein, *Head*
Alberto E. Patiño Douce, *Graduate Coordinator,* 542-2394
(GG Building)

The department offers instruction and opportunities for research in archaeological geology, economic geology, geochemistry, clay mineralogy, geophysics, hydrogeology, marine geology, mineralogy, paleontology, micropaleontology, petrology, stratigraphy-sedimentology, and other fields. Graduate programs leading to the MS and PhD are individually arranged to fit each student and his/her background.

Facilities for graduate training and research include analytical and experimental laboratories containing X-ray diffraction equipment, mass spectrometers, FTIR and an electron microprobe. Special facilities include a stable isotope laboratory, a potassium-argon laboratory, an experimental petrology laboratory, equipment for seismological studies, a cathodeluminoscope, a carbon-14 and tritium dating laboratory, a neutron activation analysis laboratory, paleontological and sedimentological laboratories, and laboratories for sample preparation, optical determination, 12 station computer lab and photomicroscopy. The university's Marine Institute on Sapelo Island and the Skidaway Institute of Oceanography at Savannah provide facilities for research in marine geology. Companion facilities include the university computer center, electron microscopy laboratory, field vehicles, instrument shops, and rock, mineral, and fossil collections.

GEOL 4050/6050. Facies Models and Stratigraphy. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: GEOL 4010-4010L.
Sedimentary processes in major siliciclastic and carbonate depositional environments. Factors affecting deposition and erosion of sediments on time scales of hundreds of years to hundreds of thousands of years.

GEOL 4060/6060. Structural Geology. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: GEOL 3010-3010L.
Stress and strain within the earth, and the mechanical properties and behavior of earth materials. Geologic structures, their recognition and interpretation in the field, and solution of structural problems. Framework of the earth's crust; evolution of mountain belts, continents, and basins. Relation between structures, deformation, and plate tectonics.

GEOL 4090/6090. Marine Geology. 3 hours.
Undergraduate prerequisite: [GEOL 1250-1250L or (GEOL 1121 and GEOL 1121L)] and [GEOL 1260-1260L or (GEOL 1122 and GEOL 1122L)].
The geologic aspects of ocean basins, including morphology, sedimentation processes, and mode of origin.

GEOL 4110/6110. Principles of Geochemistry. 3 hours.
Undergraduate prerequisite: (CHEM 1212 and CHEM 1212L and GEOL 3010-3010L) or permission of department.
Distribution of elements and isotopes in minerals, rocks, and waters. Principles governing the migration and behavior of elements and isotopes.

(GEOL)(CRSS)(ENGR)FORS 4170/6170. Hydrology, Geology, and Soils of Georgia. 3 hours.
Prerequisite: Permission of school.
This field course focuses on the physical environment of Georgia by examining the diverse geology, soils, and surface and subsurface hydrologic processes

within the state. We will travel to all of Georgia's physiographic areas, visiting mines, farms, forests, wetlands, rivers, lakes, and estuaries to explore the influence of human activities on the physical environment.

GEOL 4220/6220. Hydrogeology. 3 hours.
Groundwater in the hydrologic cycle. Examination of flow through porous media, regional flow, influence of wells, water chemistry, and contaminant transport. Emphasis on practical environmental problems.

GEOL 4250/6250. Field Methods in Geology. 2 hours. 1 hour lecture and 3 hours lab per week.
Undergraduate prerequisite: GEOL 3010-3010L.
Undergraduate prerequisite or corequisite: GEOL 3020-3020L.
Field measurement of geologic parameters, accurate recording of observations, production and interpretation of geologic maps and cross sections, and the recognition of structures and lithologies in the field.

GEOL 4270/6270. Geology Field School. 6 hours.
Undergraduate prerequisite: GEOL 3020-3020L or GEOL 4010-4010L or GEOL 4020-4020L or GEOL 4250/6250.
Theory and practice of field measurement, large scale planimetric and topographic mapping, and grid surveying. Graphic presentation of field data. Geologic mapping projects, including interpretation of observed geologic features. Summary maps and reports must be prepared and defended in the field. Student must demonstrate mastery of the knowledge and skills taught in the required on-campus major courses.

GEOL 4300/6300. Igneous and Metamorphic Petrology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: GEOL 4020-4020L.
Textures, mineralogy, and classification of the common igneous and metamorphic rocks. Origin of magmas and volcanoes and their impact on civilizations; evolutions of continental and oceanic crusts; metamorphic rocks as probes of crustal processes.

GEOL 4310/6310. Economic Geology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: GEOL 4020-4020L.
Classification and origin of base and precious metal ore deposits; relationships between ore deposits, host rocks, and plate tectonics; principles of ore deposit exploration and evaluation.

GEOL 4330/6330. Geology of North America. 3 hours.
Undergraduate prerequisite: GEOL 1260-1260L.
Evolution of North American continent through time. Stratigraphic, sedimentary, and magmatic history and tectonic development of various regions since the early Precambrian. Paleontological record of environmental and biological changes. Origin of energy, mineral, soil, and water resources. History of human habitation and resource utilization. Current environmental hazards and challenges.

GEOL(ANTH) 4340/6340. Archaeometry. 3 hours.
Undergraduate prerequisite: GEOL(ANTH) 4700/6700.
Undergraduate prerequisite or corequisite: GEOL 1121 or GEOL 1121H or GEOL 1122 or GEOL 2350H or ANTH 3220 or ANTH 3250 or ANTH(ECOL) 4210/6210 or CLAS(ANTH) 2000.
Methods of archaeometric analysis including chronometric and instrumental techniques. Absolute age dating and characterization of archaeological materials by physico-chemical analysis.

GEOL 4350/6350. Geology of the Planets and Moons. 3 hours.
Undergraduate prerequisite: GEOL 3020-3020L and GEOL 4020-4020L.
Geology of the planets, moons, and asteroids, including internal, surficial, and atmospheric processes. Studies in comparative planetology aimed at showing how unique the current life-supporting environment of the Earth is, and why other planets have undergone such dramatically different evolutions.

GEOL 4370/6370. Data Analysis in the Geosciences. 3 hours.
The principles of data analysis, including data collection methods, graphical presentation, and basic statistics.

GEOL 4410/6410. Introduction to Research in Archeogeology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to archeogeology.

GEOL 4420/6420. Introduction to Research in Geochemistry. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to geochemistry.

GEOL 4430/6430. Introduction to Research in Geophysics. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to geophysics.

GEOL 4440/6440. Introduction to Research in Hydrogeology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to hydrogeology.

GEOL 4450/6450. Introduction to Research in Mineralogy. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to mineralogy.

GEOL 4460/6460. Introduction to Research in Paleontology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to paleontology.

GEOL 4470/6470. Introduction to Research in Petrology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to petrology.

GEOL 4480/6480. Introduction to Research in Sedimentary Geology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques appropriate to sedimentation and stratigraphy.

GEOL 4490/6490. Introduction to Research in Structure/Tectonics. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to structural geology and/or tectonics.

GEOL 4500/6500. Sedimentary Geology. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: GEOL 3010-3010L.
Interpretation and origin of sediments and sedimentary rocks, with an emphasis on grain production, sediment transport, diagenesis, facies models, sequence stratigraphy, and sedimentary basins. Emphasis is placed on the analysis of sedimentary rocks in hand sample and thin section, as well as application of course material in solving geological problems.

GEOL 4510/6510. Marine Micropaleontology. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: GEOL 4010-4010L.
Geologic history and applications of marine microfossils, especially foraminifera, calcareous nannoplankton, radiolaria, and diatoms.

GEOL 4520/6520. Paleoecology. 3 hours. 1 hour lecture and 4 hours lab per week.
Undergraduate prerequisite: [GEOL 1260-1260L or (GEOL 1122 and GEOL 1122L) or (GEOL 1122H and GEOL 1122L) and GEOL 4010-4010L] or permission of department.
The ecological factors affecting the distribution and abundance of fossil organisms, with emphasis on marine invertebrates. Invertebrates as a guide to environments of the past and as indicators of environmental change. Taphonomy of invertebrates.

(GEOL)CRSS 4540/6540-4540L/6540L. Pedology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or permission of department.
Soils as a natural component of the ecosystem, including morphology, landscape distribution, formation, identification of diagnostic horizons and features, and classification.

GEOL 4550/6550. Clay Mineralogy and Geochemistry. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: GEOL 3010-3010L.
Clay minerals with emphasis on x-ray diffraction analysis and identification of mixed layer systems. Geochemical factors for clay origin and uses including applications to soils, petroleum, archeological, environmental and economic ore deposit studies.

GEOL 4560/6560. Weathering and Diagenesis. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CHEM 1211 and CHEM 1211L and GEOL 3020-3020L.
Global cycling of major elements. Rock-water interactions. Kinetics of mineral dissolution and growth in soil, marine, freshwater, sedimentary basins and hydrothermal systems. Geochemical models for estimating reaction rates and reservoir capacities/fluxes are considered.

GEOL 4600/6600. Solid Earth Geophysics. 3 hours.
Undergraduate prerequisite: GEOL 4020-4020L and MATH 2200 and MATH 2200L.
Analysis of Earth's gravity, magnetic, and seismic wave fields applied to the investigation of structure and dynamics of the Earth's interior. Course will cover theory, methods of analysis, and results of geophysical investigations. Emphasis on major new initiatives in satellite geodesy and digital seismic array studies.

GEOL 4620/6620. Exploration Geophysics. 3 hours.
Undergraduate prerequisite: GEOL 4020-4020L and MATH 2200 and MATH 2200L.
Geophysical methods for imaging the subsurface. Course will focus on gravity, magnetic, resistivity,

seismic refraction, and seismic reflection surveys. Applications discussed include exploration for hydrocarbons and characterization of the shallow subsurface for engineering/groundwater studies. Laboratory will include field experiments and computer modeling studies.

GEOL 4640/6640. Geochemical and Geophysical Surveys. 3 hours.
Undergraduate prerequisite: GEOL 3010-3010L.
Undergraduate prerequisite or corequisite: GEOL 4020-4020L.
Geochemical dispersion and survey of common pathfinder elements; methods of instrumental analysis used in geochemical exploration. Background theory of gravity, magnetic, electromagnetic, and electrical techniques used in resource exploration. Field based projects.

GEOL 4660/6660. Field School in Shallow Geophysics. 6 hours. 6 hours lecture and 48-56 hours lab per week.
Undergraduate prerequisite: (GEOL 1121 and GEOL 1121L) or GEOL 1250-1250L or permission of department.
Techniques for the geophysical propsection of near-surface geology, geohydrology, and geomorphology. Techniques include electro-magnetic, radar, sonar, and magnetism.

GEOL 4670/6670. Environmental Instrumental Analysis. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: CHEM 1212 and CHEM 1212L.
Lecture and laboratory course emphasizing principles and practical experience in chemical analysis of sediments, rocks and water, with particular emphasis on environmentally important organic and inorganic contaminants.

GEOL(ANTH) 4700/6700. Archaeological Geology. 3 hours.
Archaeological geology examines the use of earth science methods and theories in the study of archaeological sites and their contents. The four major areas covered include: (1) the archaeological site and geology; (2) age determination techniques; (3) exploration techniques; (4) artifact characterization.

GEOL 4750/6750. Earth Sciences for Middle School Teachers. 4 hours.
Fundamentals of earth sciences for middle school teachers. Map interpretation; minerals and rocks; principles of astronomy, meteorology and oceanography. Processes at the surface and inside the Earth. Emphasis on plate tectonics; geologic time scale, evolution of life, and a study of fossils. Geology and resources of Georgia.

GEOL 4900/6900. Seminar in Geohydrology. 1 hour. Repeatable for maximum 6 hours credit.
Current and classical studies in geohydrology.

GEOL 4910/6910. Seminar in Geochemistry. 1 hour. Repeatable for maximum 6 hours credit.
Current and classical studies in geochemistry.

GEOL 4920/6920. Seminar for Geology Teaching Assistants. 1 hour.
Discussion of the delivery of geology laboratory material, including presentation techniques, attendance policy, grading, and support systems.

GEOL 4950/6950. Geology Seminar. 1 hour. Repeatable for maximum 6 hours credit.
Reviews and discussions of current research topics.

GEOL 6130. Aqueous Environmental Geochemistry. 3 hours.
Prerequisite: GEOL 4110/6110.
Chemical behavior of natural aquatic systems: chemical kinetic and equilibrium relationships controlling the quality of surface and subsurface waters, both pristine and polluted. Distribution and behavior of chemical species in aqueous environments.

GEOL 7000. Master's Research. 1-12 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

GEOL 7300. Master's Thesis. 1-12 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

GEOL 8010. Advanced Topics in Archaeological Geology. 1-3 hours. Repeatable for maximum 9 hours credit.
Intensive study under the direction of staff members on approved topics.

GEOL 8020. Advanced Topics in Geochemistry. 1-3 hours. Repeatable for maximum 9 hours credit.
Intensive study under the direction of staff members on approved topics.

GEOL 8030. Advanced Topics in Geophysics. 1-3 hours. Repeatable for maximum 9 hours credit.
Intensive study under the direction of staff members on approved topics.

GEOL 8040. Advanced Topics in Hydrogeology. 1-3 hours. Repeatable for maximum 9 hours credit.
Intensive study under the direction of staff members on approved topics.

GEOL 8050. Advanced Topics in Mineralogy. 1-3 hours. Repeatable for maximum 9 hours credit.
Intensive study under the direction of a staff member on approved topics.

GEOL 8060. Advanced Topics in Paleobiology. 1-3 hours. Repeatable for maximum 9 hours credit.
Intensive study under the direction of staff members on approved topics.

GEOL 8070. Advanced Topics in Petrology. 1-3 hours. Repeatable for maximum 9 hours credit.
Intensive study under the direction of staff members on approved topics.

GEOL 8080. Advanced Topics in Sedimentary Geology. 1-3 hours. Repeatable for maximum 9 hours credit.
Intensive study under the direction of staff members on approved topics.

GEOL 8090. Advanced Topics in Structural Geology. 1-3 hours. Repeatable for maximum 9 hours credit.
Intensive study under the direction of staff members on approved topics.

GEOL 8100. Microchemical Analysis of Geologic Materials. 3 hours. 1 hour lecture and 6 hours lab per week.
Theoretical and laboratory study of microchemical analytical techniques commonly used to analyze the composition of geologic materials. Includes training on the operation of the JEOL 8600 Superprobe for geochemical analysis.

GEOL 8110. Paleooceanography. 3 hours.
Prerequisite: GEOL 4010-4010L and GEOL 4090/6090.
History of temporal and environmental changes in physical, chemical, and biological components of the ocean as recorded in deep-sea sediments and oceanic crust. Emphasis is placed on the role of paleoclimates in the evolution of the ocean.

GEOL 8120. Paleobiodiversity. 3 hours. 3 hours lab per week.
Prerequisite: GEOL 4520/6520 or permission of department.
Pattern, process and causal mechanisms of modern and fossil biodiversity issues.

GEOL 8130. Paleocommunities. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GEOL 4010-4010L.
Geologic history and paleoecology of fossil associations through time with emphasis on the marine fossil record.

GEOL 8140. Sequence Stratigraphy. 3 hours.
Prerequisite: GEOL 4010-4010L.
Principles of sequence stratigraphy. Roles of sediment supply, subsidence, and eustasy in the accumulation of sediments on time scales of tens of thousands of years and longer.

GEOL 8150. Earth Surface Geochemistry. 3 hours.
Prerequisite: GEOL 4110/6110.
Geochemical principles, materials, and processes related to the near-earth-surface environment. Systems studied include weathering and shallow groundwater; rivers, lakes, and oceans; diagenesis and deep groundwater; and the linkage of the rock and water cycles.

GEOL 8160. Advanced Igneous Petrology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: GEOL 4300/6300.
Mineralogy, petrology, and chemical compositions of igneous rocks. Origin and evolution of magmas and the causes and characteristics of volcanic eruptions including effects on climate and societies.

GEOL 8180. Sandstone Petrology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: GEOL 3010-3010L.
Petrology of sandstones: classifications, mineralogy, geochemistry, provenance, diagenesis, porosity, and hydrogeology of sandstones. Laboratory examination of sandstone mineralogies and diagenetic fabrics.

GEOL 8200. Carbonate Petrology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: GEOL 3010-3010L and GEOL 4010-4010L.
Petrology, mineralogy, and geochemistry of limestones, dolostones, speleothems, travertines, and other carbonate-bearing geological materials. Precipitation of carbonate minerals, origin of carbonate grains, neomorphism, diagenesis, dolomitization, silicification, porosity, and permeability in carbonate rocks.

GEOL 8220. Advanced Metamorphic Petrology. 3 hours.
Prerequisite: GEOL 4300/6300.
Rigorous and quantitative study of metamorphic rocks through the use of chemical thermodynamics. A study of chemical equilibrium and solution behavior applied to minerals and geologic fluids is followed by specific applications to metamorphic rocks.

GEOL 8250. Plate Tectonics. 3 hours.
Prerequisite: GEOL 4020-4020L.
Mechanics of plate motion on a sphere; analysis of earthquake focal mechanisms and state of stress in the lithosphere; paleomagnetism; true polar wander; geologic processes at plate boundaries; forces driving plates. Discussion of papers covering models for convection, fate of slabs, recent results from global tomography, and regional tectonics.

GEOL 8270. Continental Tectonics. 3 hours. 3 hours lecture and 1 hour lab per week.
Prerequisite: GEOL 4060/6060.
Growth and evolution of mountain systems, orogenic belts, and related terranes. Emphasis on processes of deformation, metamorphism, and crustal growth; characteristics and evolution of principal structural provinces; plate tectonic driving forces; relations between deformation, magmatism, and sedimentation. Different orogenic belts, ancient and modern, used as comparative examples.

GEOL 8460. Isotope Geochemistry. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: GEOL 4020-4020L and GEOL 4110/6110.
Theory of isotope fractionation and radioactive decay. Analytical methods for measurement of isotope ratios. Applications of isotope methods in the earth sciences including age dating, studies of chemical cycles in the environment, and evolution of inorganic and organic systems.

GEOL 8600. Advanced Topics in Seismology. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (GEOL 4020-4020L and MATH 2210 and MATH 2210L and PHYS 1212-1212L) or permission of department.
Topics in theoretical and observational seismology. Wave propagation, time series analysis, geophysical data processing, inverse theory, and seismic array studies of the lithosphere, mantle and core. Topics to vary from year to year.

GEOL 8700. Physical Hydrogeology. 3 hours.
Mathematical treatment of subsurface flow and transport using the hydraulic approach. Both regional and local problems are examined. Emphasis is on selecting the appropriate differential equation and boundary conditions to adequately describe a problem. Practical applications are used to illustrate the approach.

(GEOL)FORS 8730. Aquifer Mechanics. 3 hours.
Prerequisite: FORS 4110/6110 or GEOL 4220/6220 or GEOG 4030/6030 or CRSS 4600/6600-4600L/6600L or permission of school.
Mechanics of flow through subsurface media, including flow in confined, water table, and leaky aquifers, delayed yield, partially penetrating wells, boundaries, multiple wells, dual porosity media, and fractured rock; use of aquifer tests to estimate aquifer hydraulic properties.

GEOL(FORS) 8740. Hydrologic Flow and Transport Modeling. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: GEOL 8700 or FORS 4120/6120.
Solutions of surface and subsurface flow and transport problems including finite difference, finite element, and boundary integral methods. Analytic techniques include Laplace-, z-, and Fourier-transform, complex variable, and separation of variables methods. Application to problems commonly found in the environmental field, including capture zones, particle-tracking, advection-dispersion, and non-aqueous phase liquids.

GEOL 8750. Environmental Organic Geochemistry. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L and GEOL 1260-1260L.
Origin and distribution of organic compounds in rocks, soils, and water. Biochemistry of major classes of organic compounds found in rocks, soils, and minerals. Emphasis on anthropocentric contamination and geochemistry of remediation.

GEOL(CRSS) 8760. Organic Contaminant Hydrogeology. 3 hours.
Prerequisite: (CHEM 2100 and CHEM 2100L) or (CHEM 2212 and CHEM 2212L) or permission of department.
Physical and chemical processes controlling the mobility and fate of organic contaminants in soils, sediments, surface, and ground waters. Processes include biotic and abiotic (hydrolysis, volatilization, sorption, redox, and photochemical) reactions in the natural systems. Relationships between chemical structure and reactivity in the environment.

GEOL 8770. Hazardous Waste Site Remediation. 3 hours.
Prerequisite: GEOL 6130 and EHSC 4350/6350-4350L/6350L.
The current state of environmental pollution and the application of innovative technologies in clean-up of contaminated soil, sediment, and groundwater. Evaluate the performance and limitations of existing technologies due to site heterogeneity.

GEOL 8780. Environmental Isotopes. 3 hours. 2 hours lecture and 3 hours lab per week.
The use of naturally occurring stable and radiogenic isotopes for solving environmental problems. Principles of isotope fractionation, radionuclide counting methods, applications to solving hydrologic problems,

and laboratory techniques for analyzing O-and H-, C-stable isotopes and H-and Rn-radiogenic isotopes.

GEOL 8790. Special Projects in Hydrogeology and Environmental Geology. 3 hours. 1 hour lecture and 6 hours lab per week.
Prerequisite: GEOL 8700 or permission of department.
Environmental geological problems such as sanitary landfills, underground storage tank contaminated sites, mine land pollution areas, and hydrological assessment of wetlands.

GEOL 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

GEOL 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Germanic and Slavic Languages

Max Reinhart, *Head*
Renate Born, *Graduate Coordinator,* 542-2457
(Joseph Brown Hall)

The German Program in the Department of Germanic and Slavic Languages offers the MA degree with a concentration in either literature or linguistics. Requirements for the degree are 30 credit hours of course work, a thesis, a final examination and a reading examination (or a grade of B in a course at the 2002 level or higher) in a modern foreign language besides German. In addition to comprehensive training in the discipline, the department also provides candidates the opportunity to develop elementary and intermediate language teaching skills while serving as teaching assistants. A full description of the program and the requirements may be obtained at the departmental website: www.uga.edu/gslangs/grad.html or by contacting the graduate coordinator.

German

GRMN 4001/6001. Advanced German Conversation and Composition. 3 hours.
Undergraduate prerequisite: GRMN 3002.
Vocabulary building and review of grammar. Emphasis on common errors of English speakers and on distinctions in meaning.

GRMN 6100. Medieval German Literature. 3 hours.
Medieval German literature from approximately 800 to 1350. Representative readings from the Old High German and Middle High German periods. Includes texts that provide background on medieval political, social, and cultural developments.

GRMN 6200. Early Modern German Literature. 3 hours.
German literature from approximately 1350 to 1740. Representative readings from Humanism, Renaissance, Reformation, Counter-Reformation, and the Baroque. Includes vernacular and neo-Latin literature by German writers; effect of social, political, religious, and intellectual currents on the German Republic of Letters is considered.

GRMN 6300. German Literature from the Enlightenment through Classicism. 3 hours.
Prerequisite: GRMN 3001.
Representative readings from Enlightenment, Empfindsamkeit, Storm and Stress, and Classicism. Includes texts that provide background on eighteenth-century political, social, and cultural developments.

GRMN(LING) 6380. Contrastive Grammar: German-English. 3 hours.
Identification and examination of the salient structural similarities and differences between German and English.

GRMN 6400. German Literature from Romanticism through Realism. 3 hours.
Prerequisite: GRMN 3001.
Representative readings from early to late Romanticism, Junges Deutschland, Vormaerz, Biedermeier, and Realism. Includes texts that provide background on nineteenth-century political, social, and cultural developments.

GRMN 6460. Structure of Modern German. 3 hours.
Prerequisite: GRMN 3001.
Linguistic and sociolinguistic structures of modern German with relevant linguistic terminology. Emphasis on phonology, morphology, and syntax. Taught in English.

GRMN 6500. German Literature from Naturalism to the Present. 3 hours.
Prerequisite: GRMN 3001.
Representative readings from Naturalism, Impressionism, Expressionism, wartime and post-war literature, literature of the GDR, and contemporary literature through post-unification. Includes texts that provide background on twentieth-century political, social, and cultural developments.

GRMN(LING) 6600. History of the German Language. 3 hours.
The origins of modern standard German from the Indo-European parent language through proto-Germanic, Old and Middle High German, and the early modern period.

GRMN(LING) 6810. German Phonology and Morphology. 3 hours.
Theoretical and applied German phonology and word structure. Taught in English.

GRMN 7000. Master's Research. 3-6 hours. Repeatable for maximum 27 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

GRMN 7300. Master's Thesis. 3-9 hours. Repeatable for maximum 27 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

GRMN(LING) 7500. Problems and Methods of Teaching College German. 3 hours.
Methods for teaching foreign language and development of language skills in German. For teaching assistants in German and graduate students in German and Language Education. Taught in English.

GRMN 8160. Directed Reading and/or Projects. 3 hours.
Individual study, reading, or project under the direction of a project director.

GRMN(LING) 8320. Gothic. 3 hours.
Morphology, phonology, and history of the Gothic language based on extant texts. Emphasis on the development of earlier stages of the language and on its later language forms. Taught in English.

GRMN(LING) 8400. Middle High German. 3 hours.
Phonology and grammar of the language, with extensive readings in the prose, epic, and lyric poetry of the Middle High German era.

GRMN 8410. Proseminar. 3 hours.
Bibliography and methodology of research in German literature and linguistics. Survey of literary theory. Required of all graduate students in German.

GRMN(CMLT) 8480. Aesthetic Theory (Kant to Adorno). 3 hours.
Major 18th-, 19th-, and 20th-century tracts on aesthetic theory, mainly drawn from the German philosophical tradition. In-depth study of such concepts as beauty, the sublime, sensate knowledge, aestheticism, aesthetic ideology, the anti-aesthetic, and the end of art, against the background of contemporary continental theory.

GRMN(LING) 8510. Seminar in German Linguistics. 3 hours. Repeatable for maximum 9 hours credit.
Intensive investigation of a subject or topic in German linguistics. Taught in English.

GRMN(LING) 8520. Seminar in German Language Variation. 3 hours. Repeatable for maximum 9 hours credit.
Intensive investigation of synchronic and diachronic variation in German. Taught in English.

GRMN 8530. Seminar in German Literature. 3 hours. Repeatable for maximum 9 hours credit.
Intensive investigation of a particular genre, theme, topic, or author.

GRMN 8540. Seminar in German Studies. 3 hours. Repeatable for maximum 9 hours credit.
Intensive investigation of a particular theme or topic.

Russian

RUSS 6980. Directed Study in Russian Literature. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Individual study, reading, or projects in Russian literature under the supervision of a project director.

RUSS 6990. Directed Study in Russian and Slavic Linguistics. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Individual study, reading, or projects in Russian and Slavic linguistics under the supervision of a project director

Gerontology

Leonard W. Poon, *Director*
Kevin C. Lomax, *Graduate Coordinator,*
425-3219
(Candler Hall)

The University of Georgia has a strong commitment to gerontology training. Training in gerontology is directed through the Gerontology Center, which offers a Graduate Certificate in Gerontology to complement students' master's and doctoral training. The Certificate requires 18 semester hours of graduate course work in aging (from a variety of departments) including three semester hours of field experience or three semester hours of research. Please see Index for detailed information on courses and requirements. Many other courses that are part of the University of Georgia's commitment to gerontology training and that qualify for the Certificate in Gerontology exist. They are listed in the academic unit charged to offer the course. For a complete and current list of all such courses, please contact the Gerontology Center's Assistant Director. The courses having a Gerontology prefix are listed below.

GRNT 4010/6010. Biogerontology. 3 hours.
The physiological and anatomical changes that occur as a person ages. The basics of the biology of aging followed by a system by system description of the aging phenomena in the human body.

GRNT(PSYC) 5266/7266. Death, Dying, and Bereavement. 3 hours.
Undergraduate prerequisite: Permission of department.
Multi- and inter-disciplinary approaches are used to explore death, dying, and bereavement from a variety of biopsychosocial perspectives.

GRNT 6000. Seminar in Aging. 3 hours.
Prerequisite: Permission of department.
Basic concepts of gerontology in an interdisciplinary setting to provide the student with a theoretical framework upon which to base further study and research in the field of aging.

GRNT 6390. Service Learning with the Elderly. 3 hours.
Prerequisite: Permission of department.
Supervised field experience designed to assist in reinforcing knowledge, theories, and principles gained through courses in or related to the field of gerontology.

GRNT 8000. Advanced Topics in Gerontological Research and Theory. 3 hours.
Prerequisite: Permission of department.
Interdisciplinary topics and new developments in gerontological research and theory, focused on a specific theme.

GRNT 8010. Advanced Topics in Gerontology Practice. 3 hours.
Prerequisite: Permission of department.
Interdisciplinary topics on new developments in the practice of gerontology.

Global Policy Studies

Mark Crepaz, *Graduate Coordinator,* 542-2927
(Baldwin Hall)

Please see Index for information on the certificate program in global policy studies. The courses having a global policy studies prefix are listed below.

GPST 6000. Global Policy Analysis. 3 hours.
Prerequisite: Six hours of graduate credit.
Interdisciplinary and multilevel analyses of global policy problems in the domains of identity, security, and prosperity. Special emphasis on cooperative or collective action solutions to these problems.

GPST 7500. Global Policy Internship. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Six hours of graduate credit.
Academic portion of an internship providing work or field experience in global policy studies.

History

Edward J. Larson, *Head*
Michael P. Winship, *Graduate Coordinator,*
542-2531
(LeConte Hall)

The history department offers work leading to the MA and PhD degrees. The MA program in history consists of 30 semester hours, including HIST 7900 (Theory and Practice of History) and two other 8000-level courses. Additional requirements are: two colloquia in the major field (American or European) and one colloquium in the minor field (American, European or other approved graduate course), reading competence in a foreign language, a thesis, and an oral examination. The PhD student must demonstrate through both written and oral examinations a thorough knowledge of four fields of history or three fields of history and a fourth field in another discipline. In addition, PhD students must complete HIST 7910 (Teaching History in Colleges and Universities), two colloquia in the major field (American or European), one colloquium in the minor field (American, European, or other approved graduate course), and a minimum of 6 semester hours of 8000-level courses. However, if HIST 7910 (or its equivalent) has not been completed, it may be taken with the permission of the major professor and the endorsement of the graduate coordinator and be counted in fulfillment of part of the additional seminar requirement. A reading competence in two foreign languages is required of all doctoral candidates, but with the permission of the major professor and the endorsement of the graduate coordinator, two courses in quantitative methodology may be substituted for one foreign language. A dissertation may be presented in United States, European, or other selected fields of history. Students holding a BA degree may be admitted into the doctoral program. The PhD requires 30 semester hours beyond the MA for a total of 60 semester hours.

The graduate program stresses research and writing under faculty guidance. In addition, students possessing the MA degree may receive practical experience in teaching by holding teaching assistantships. The department awards a number of teaching assistantships and non-teaching assistantships each year. Application for these should be made directly to the Graduate Coordinator of History. The deadline for applications for financial assistance is January 1.

HIST 4000/6000. Studies in American History. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Junior or senior standing.
A special subject not otherwise offered in the history curriculum. Topics, methodology, and instructors vary from semester to semester. Normally, no more than two such courses may be counted toward the major or the minor in history, exceptions being made only by the Coordinator of Instruction.

HIST 4030/6030. Politics of Morality in the United States. 3 hours.
Origin of selected political and moral dilemmas in American multicultural contexts from the Colonial to the Contemporary period.

HIST 4040/6040. Working Class America. 3 hours.
Using fiction and film as well as traditional texts, the history of working-class women and men in the United States. The emphasis will be on the everyday lives of the laborers—what they did at work and at home, in the union hall, and on the picket line.

HIST 4050/6050. American Lives. 3 hours. Repeatable for maximum 6 hours credit.
Biographies and autobiographies to explore a variety of themes and issues in American history. Emphases will differ depending on instructor: focus may be nineteenth century, twentieth century, women, race, southern autobiography, etc.

HIST(AFAM) 4055/6055. Historical Survey of African American Thought. 3 hours.
This course examines representative works of such nineteenth- and twentieth-century social, cultural, and political thinkers as Frederick Douglass, Cornel West, Anna J. Cooper, and Angela Davis among other outstanding women and men who have contributed significantly to the intellectual life of the African American community.

HIST 4060/6060. American Legal History. 3 hours.
American legal thought, institutions, and education, focusing on the impact of social, political, and economic forces on the legal system. The English background, colonial period, legal foundations of the new nation, and the nineteenth and twentieth centuries.

HIST 4065/6065. History of American Medicine to 1865. 3 hours.
Medicine in America from the late 1400s to the end of the Civil War. Topics include the exchange of diseases between the Old and New Worlds, medical theories and therapies, medical education and institutions, epidemics and public health, women as patients and practitioners, and medicine on the plantation and battlefield.

HIST 4066/6066. History of American Medicine, 1865 to the present. 3 hours.
Major transformation in American medicine from the late nineteenth century to the present. Topics include the role of psychiatry in criminal trials, public reactions to epidemic diseases, medical experimentation on human subjects, alternative medical approaches, the economics of health care.

HIST 4067/6067. History of American Technology. 3 hours.
Undergraduate prerequisite: HIST 2111 or HIST 2112.
The history of technology in the United States from the pre-colonial era until the present, with a focus on the social and cultural histories of technology.

HIST 4068/6068. The American Revolution. 3 hours.
Undergraduate prerequisite: 2000-level HIST course.
Analysis of the political, military, social, and economic history of British North America and the United States between 1765 and 1815. Emphasis on the origins of the Revolution, the destructive civil war that ensued, and the controversies over the Confederation and the Constitution.

HIST 4070/6070. Jeffersonian and Jacksonian America. 3 hours.
History of the U.S. from the early republic through the antebellum period, with emphasis on territorial expansion, industrialization, the first and second political systems, and the emergence of the sectional crisis.

HIST 4071/6071. Antebellum South. 3 hours.
A chronological and thematic history of the South from Spanish exploration and Jamestown's settlement through the secession crisis of 1860-1861, with an emphasis on the social, cultural, economic, and political aspects of southern life in the colonial and antebellum periods.

HIST 4072/6072. The Civil War Period of American History. 3 hours.
The origin, conduct, and legacy of the war and the impact of the conflict upon peoples and institutions.

HIST 4073/6073. The Era of Reconstruction, 1865-1877. 3 hours.
The process of reunion, especially in the American South, with emphasis upon the experience of African Americans.

HIST 4074/6074. The South Since Reconstruction. 3 hours.
Economic, social, cultural, and political developments in the South since Reconstruction.

HIST 4075/6075. Scientific Interests in the South. 3 hours.
Scientific inquiry in the southeastern region of the United States. Stresses cultural and intellectual milieu, examines special role of natural history, and compares inquiries of southern scientists with those of other contemporary United States scientists.

HIST 4080/6080. Politics of Gender in United States History. 3 hours.
Representations of women's power historically, evaluated critically in terms of gender, race, and class.

HIST 4091/6091. Problems in American Foreign Policy, 1776-Present. 3 hours.
Selected problems related to United States foreign policy.

HIST 4092/6092. The United States in the Era of the Cold War. 3 hours.
The political, diplomatic, military, and social history of the United States during the era of the Cold War (1946-1992).

HIST 4094/6094. The Vietnam War. 3 hours.
The political, military, and diplomatic aspects of the Vietnam War, from the French involvement in the 1940s and 1950s to the United States departure in 1973 and the fall of Saigon in 1975.

HIST 4100/6100. History of Georgia. 3 hours.
Using historical scholarship, biography, and film, the Georgia past from pre-history to the present. Themes of race, class, and modernization in the development of Georgia; special emphasis on the lives of everyday Georgians at various points in history.

HIST 4110/6110. Multicultural Georgia. 3 hours.
The history of the state, with an emphasis on its racial, ethnic, religious, gender, and regional diversity, to be examined through historical documents, novels, short stories, folklore, memoirs, music, and film.

(HIST)ESOC 4150/6150. Teaching United States History. 3 hours.
Classic historiography and current debates among historians over major themes and events in United States history. Examination of ways in which this historical scholarship can be incorporated into social studies teaching. Evaluation of materials and methods used to teach United States history in secondary and middle schools.

HIST 4200/6200. Studies in Latin American History. 3 hours. Repeatable for maximum 9 hours credit.
Special issues or topics in Latin American history not covered in a regular history course. Topics, methodology, and instructor vary from semester to semester. Representative topics include the Latin American revolutionary tradition, the wars of independence in the Americas, and Latin American wars.

HIST 4210/6210. Latin America: A Socioeconomic History Since 1930. 3 hours.
Latin American social and economic development from the onset of the Depression until the present. The

role of the state in economic development; the impact of modernization on traditional social systems; persistence of social inequity amidst development; and the liberal and revolutionary responses to social needs.

HIST 4211/6211. Cuba from Emancipation to Revolution. 3 hours.
Undergraduate prerequisite: A 2000-level HIST course.
Examination of Cuba's social history from the eighteenth century to the present. Focus on the struggles for freedom from slavery, Spanish colonialism, U.S. imperialism, and other forms of oppression. The class will seek to explain how the various sectors striving for "freedom" in the island—especially Afro-Cubans—understood their liberation.

HIST 4220/6220. The United States and Latin America. 3 hours.
The political, economic, and cultural relations between the United States and Latin America from 1776 to the present. Spanish-American revolutions, the Monroe doctrine, United States expansionism, the Pan American system, United States intervention, the Good Neighbor policy, Latin America in the Cold War, and United States and Latin American revolutions.

HIST(CLAS) 4225/6225. Medicine, Healing, and the Body in Ancient Greece and Rome. 3 hours.
The origins of the rationalist tradition in medicine; folk and cult methods of healing; the medical construction of gender differences; attitudes toward the body, including asceticism; and topics in the social history of medicine (such as childbirth, disease, and medical society) will be explored.

HIST 4300/6300. Studies in European History. 3 hours.
Topical studies that vary by year and instructor. Topics might include "Art and Society in the Age of the Reformation," "War and Gender in Twentieth-Century Europe," "Society and Culture in the Medieval European City," and "Imperialism and Anti-imperialism in Modern Europe."

HIST(CLAS) 4320/6320. Law and Society in the Greco-Roman World. 3 hours.
Law and its functions in ancient society from archaic Greece through the fifth century A.D. Includes discussion of Greek, Roman, and Christian legal codes, legal procedure, and the theory of law; also of law as a source for social history, especially issues of gender, class, crime, and the ancient economy.

HIST(CLAS) 4329/6329. Studies in Ancient Greek and Roman History. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Junior or senior standing.
Topics in ancient history that vary by year and instructor. Subject matter may include, for example, "The Hellenistic World"; "The Social History of the Roman Empire"; "Late Antiquity."

HIST 4330/6330. Institutions of the Medieval West. 3 hours.
A variety of specific topics in medieval history, such as law and justice, Anglo-Saxon England, politics of the family, and attitudes toward gender and sexuality.

HIST 4340/6340. Rebirth and Reinvention in Early Modern Europe. 3 hours.
European society in the context of pivotal social, political, and intellectual moments, from the growth of the Humanist movement to the military revolution. The goal is a better understanding of "turning points" in history, and their creation and definition.

HIST 4350/6350. Material Culture and Consumer Society in Early Modern Europe. 3 hours.
Examines the origins of modern consumerism by looking at production and consumption in pre-industrial Europe. Treats the circulation, possession, and meaning of goods such as clothes, food, books, and objects of art. Themes include consumption as a sign of social status, popular and learned attitudes toward markets, and luxury.

HIST 4360/6360. European Popular Culture. 3 hours.
The symbols, expressions, and entertainments that all Europeans drew upon from the wealthiest and best educated to the poorest and illiterate. Themes may include material culture, gender identities, folktales, reading practices, religion and worship, music and theatre. Taught as a seminar with extensive readings in primary and secondary sources.

HIST 4371/6371. The Medieval Mind. 3 hours.
The intellectual history of medieval Europe. The nature of Christian behavior will be examined in the development of premodern ideas on the human body, politics, law, and religion.

HIST 4372/6372. Intellectual History in Early Modern Europe. 3 hours.
The intellectual heritage of early modern Europe. Students will study the works of humanists, theologians, and philosophers, as well as evaluate the social context in which those works were produced.

HIST 4373/6373. Nineteenth-Century European Intellectual History. 3 hours.
European thought from 1815-1914, with emphasis on the relationship between ideas and their political and social context.

HIST 4374/6374. Intellectual History of Twentieth-Century Europe. 3 hours.
Major trends and innovations in European intellectual life, from the fin-de-si`ecle revolt against positivism to post-structuralism and its critics. Coverage will include such thinkers as Freud, Weber, and Foucault, as well as such wider cultural movements as futurism, surrealism, and existentialism.

HIST 4381/6381. Politics, Culture, and Society in Stuart England. 3 hours.
Religious, political, and cultural upheavals under the Stuart monarchs, 1603-1704.

HIST 4382/6382. Britain from the Age of Revolution to the Age of Victoria 1780-1900. 3 hours.
Britain in the age of the American War of Independence, the French Revolution, and the Industrial Revolution. Special attention will be paid to political culture, intellectual change, and economic development.

HIST 4383/6383. Britain 1901 to the Present. 3 hours.
Political culture, intellectual change, and economic/imperial readjustment in twentieth-century Britain and beyond.

HIST 4391/6391. The French Revolution and the First Empire. 3 hours.
The causes and course of Europe's first modern revolution and its reconfiguration by Napoleon Bonaparte. Students will read primary sources and a rich contemporary historiography which illuminate official and popular efforts to reshape government, society, and culture. Taught as a seminar with extensive readings.

HIST 4392/6392. Twentieth-Century France. 3 hours.
The history of France in the twentieth century, with an emphasis on politics and social change.

HIST 4400/6400. The Age of World Wars I and II. 3 hours.
The origins, course, nature, and consequences of World Wars I and II in Europe, 1870-1950.

HIST 4410/6410. Nazism and Fascism in Europe, 1919-1945. 3 hours.
The two totalitarian movements, Italian Fascism and German National Socialism (Nazism), emphasizing the intellectual origins of antidemocratic impulses before and after 1919, the unique social and political factors present in each nation, the personalities of Hitler and Mussolini, and the growth of the totalitarian one-party state.

HIST 4413/6413. Race, Nation, and Empire in the Former Soviet Union. 3 hours.
A topical seminar in Russian and Soviet history to consider issues of ethnicity and nationality since the nineteenth century. Students read both secondary and primary accounts (in translation) to understand the development, variety, and significance of ethno-national forms of identity in the tsarist, Soviet, and post-Soviet states.

HIST 4420/6420. Holocausts in History. 3 hours.
The Jewish Holocaust 1933-1945, emphasizing historical precedents and consequences. Traditional religious anti-Semitism, biologically-based racism, and extreme nationalism will be investigated as sources of modern genocidal behavior.

HIST 4430/6430. History of Science and Religion in Western Society. 3 hours.
The historical interaction of science and religion in Western Society from antiquity to the present. Key historical episodes include the rise of Greek natural philosophy, science in medieval Christendom and Islam, the Galileo affair, religion in the Enlightenment, the Darwinian challenge, and religious implicatons of modern physics.

HIST 4432/6432. Newton, Einstein, Bohr: History and Philosophical Lessons of Modern Physics. 3 hours.
Introduction to the history of modern physics and its underlying philosophy for both science and non-science majors. Basic concepts of classical physics, relativity, and quantum mechanics are explained through their history, which combines intellectual, biographical, and cultural approaches. Shows how philosophical ideas shaped the development of science and how the latter, in turn, changed human views of the world.

HIST 4435/6435. History of Russian Science from Eastern Exploration to the Space Age. 3 hours.
An introduction to the role of science and technology in Russian history: the Imperial Academy, universities, disputes over Darwinism, the Soviet system of research, the fiasco of Lysenkoism in biology, successes in physics, and the unexpected triumph of Soviet space exploration.

HIST 4440/6440. The Nuclear Age: Science, Bombs, and the World Order in the Twentieth Century. 3 hours.
An exploration of the role of nuclear energy and weapons in the history of the twentieth century, from the humble origins of the science of radioactivity and atomic nucleus, through the drama of World War II's race for the atomic bomb, to the nuclear-centered world politics and diplomacy of the Cold War.

(HIST)ANTH 4470/6470. The Rise and Fall of the Southeastern Chiefdoms. 3 hours.
Development of the native societies of the southeastern United States, the exploration of the area by Spain in the sixteenth century, and the consequences of the meeting of the two peoples.

(HIST)ANTH 4480/6480. The Indians of the Old South. 3 hours.
Social history of the native peoples of the southern United States from the beginnings of the Spanish missions and the English deerskin and slave trade through Indian removal.

HIST(AFST) 4500/6500. Studies in African or Middle Eastern History. 3 hours.
Topics in modern and ancient Middle Eastern or African history. Non-traditional methodologies and sources are combined to introduce students to emerging issues in African or Middle Eastern history.

HIST(AFST) 4510/6510. History of Famine and Food Systems in Africa. 3 hours.
African agricultural achievement, theories of production and famine systems, and attempts by colonial and international capital to control African food systems. Literature is a major source.

HIST 4530/6530. The History of Orientalism. 3 hours.
Images and symbolism used by Europeans and Americans to define the Islamic Middle East. The history of the Middle East through representation—stereotypes, myths, fairy tales, novels, films, and news coverage—particularly the ramifications of these images on Western foreign policy towards the Islamic Middle East.

HIST(AFST) 4540/6540. Conflict in Twentieth-Century Southern Africa. 3 hours.
South Africa's economic, political and military might has shaped other southern African societies (Namibia, Lesotho, Botswana, Swaziland, Zimbabwe, and Mozambique) in the twentieth century. Reform and revolution which Africans and Europeans employed to regain and maintain African independence in the region.

HIST(AFST) 4550/6550. Christianity and Colonialism in Africa. 3 hours.
Christianity was both ally and adversary to colonialism, threatening African "tradition" and aiding a vocal westernized elite which shaped independent African nations. African initiatives in Christian conversion, colonial Christianity, Africans in mission communities, mission education and westernized elites, independent African religious movements, and Christianity and African nationalism.

HIST 4600/6600. Studies in Asian History. 3 hours. Repeatable for maximum 9 hours credit.
A special issue or topic not otherwise offered in the history curriculum. Topics, methodology, and instructors will vary from semester to semester. Representative topics include "Japan and the Samurai," "Women, Gender and Family in Traditional Japan," and "Court and Countryside in Japan's Golden Age."

HIST 4700/6700. Themes in Comparative History. 3 hours.
A special subject not otherwise offered in the history curriculum. Topics, methodology, and instructors vary from semester to semester.

HIST 4725/6725. Environmental History of the Modern World. 3 hours.
Undergraduate prerequisite: 2000-level HIST course.
Examination of the environmental history of the world from approximately 1500 AD until the present, with a focus on the global processes— such as colonial and imperial expansion, industrialization and the rise of modern technological systems, agricultural intensification, and population growth—which have driven the historical acceleration of human-induced environmental change. Examination of the environmental impacts of these processes, and local responses, in all regions of the world.

HIST 4750/6750. History and Film. 3 hours.
We are living in a post-literate age. Most people now get their history from films instead of books. How film, using a different vocabulary than that of books, recreates the past.

HIST(PHIL) 4860/6860. History, History of Philosophy, Philosophy. 3 hours.
Historians and philosophers differ in the source of evidence and arguments they use and in the standards to which they appeal. Nonetheless, works in each of these fields raise questions relevant to the other field. The purpose of this course is to explore the main relationships between these two fields.

(HIST)EDHI 4900/6900. History of American College and University. 3 hours.
Undergraduate prerequisite: HIST 2111 and HIST 2112.
History of American colleges and universities from 1619 to the present. Major topics include student life, European antecedents, the nature of the university, the impact of religion, the rise of athletics, the culture of collegiate life, and the influence of society.

HIST 4960/6960. Directed Readings in History. 3 hours. Repeatable for maximum 6 hours credit.
Individual study, reading, or projects under the direction of a project director.

HIST 6521. Eastern Africa to 1800. 3 hours.
Economic, political, and cultural history of eastern Africa to 1800. The origins of agropastoralism, and rise and growth of city-states and kingdoms, the Indian Ocean trading network, and slavery.

HIST 6522. Eastern Africa 1800 to Present. 3 hours.
Economic and cultural history of east Africa from 1800-1900s. Regional systems of food production, trade, and ethnicity, missionary and merchant activity, colonial penetration, African nationalism and independence.

HIST(AFST) 6531. Africans in the Americas. 3 hours.
Fifteenth- to nineteenth-century political, social, economic connections between North, Central, South America and Caribbean and west, west-central Africa.

HIST 6611. Premodern Japan: A Survey for Graduate Students. 3 hours.
Not open to students with credit in HIST 3601.
Ancient and medieval Japan, focusing on the institutional and cultural foundations of the Japanese state.

HIST 6612. Modern Japan: A Survey for Graduate Students. 3 hours.
Not open to students with credit in HIST 3602.
Early modern and modern Japan: the transformation of Japan from an isolationist, agrarian country to a military giant, to a broken and defeated nation, to an economic superpower.

HIST 6671. Traditional China. 3 hours.
Intellectual, political, economic, social, literary, religious, and diplomatic developments of China from its beginnings to the Sung Dynasty. Influences of Confucianism, Daoism, and Buddhism on Chinese identity; development and influence of the "Shung-Guo" (Central Kingdom); trade-tribute concepts; the importance of the growth of the family system and gender views.

HIST 6672. Transitional China. 3 hours.
Internal/external influences that challenge the traditions and cause changes. Influences of nomadic invaders—the Mongols and Manchus—on social and political history, and Buddhist and Daoist influences on Neo-Confucianism. Also, the impact of Christian missionaries and western merchants on modifications of political and economic institutions.

HIST 6673. History of China III: Revolutionary China. 3 hours.
End of nineteenth through twentieth century, focusing on the Republic of China, its establishment, development, and troubles; the rise of Nationalism and Communism; establishment, development, and troubles of the People's Republic of China; emphasis on what revolutions have occurred in China, the leaders, their important ideas/impact.

HIST 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

HIST 7001. Colloquium in North American History and United States History to 1865. 3 hours.
Major themes and current historiography in North American and United States history to 1865.

HIST 7002. Colloquium in United States History: 1865 to the present. 3 hours.
Major themes and current historiography in United States history from 1865 to the present.

HIST 7200. Area Colloquium. 3 hours. Repeatable for maximum 6 hours credit.
Readings and discussions on major themes in the history and historiography of a geographical area. Time period and area will vary with the instructor.

HIST 7220. Colloquium in Latin American and Caribbean History. 3 hours. Repeatable for maximum 6 hours credit.
Major themes and historiography in Latin American and Caribbean history from pre-Columbian times to the present.

HIST 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

HIST 7321. Colloquium in Premodern European History. 3 hours.
The gradual discovery of the individual in premodern Europe. The areas of religion, politics, law, art, and literature. Readings will range from Plato and Thomas Aquinas to Dante and Leonardo da Vinci.

HIST 7322. Colloquium in Early Modern Europe. 3 hours.
Major themes and current historiography of Europe from 1500-1800.

HIST 7323. Colloquium in Modern European History. 3 hours.
Major themes and current historiography of Europe from 1800 to the present.

HIST 7600. Colloquium in Asian History. 3 hours. Repeatable for maximum 9 hours credit.
Readings on and discussion of major issues in the history and historiography of Asia. Countries and periods of focus will vary from semester to semester.

HIST 7700. Colloquium in Comparative History. 3 hours. Repeatable for maximum 6 hours credit.
Readings and discussion of major topics in the theory and practice of comparative history.

HIST 7705. Colloquium in World History. 3 hours.
Not open to students with credit in HIST 8700.
Methods, traditions, concepts, and literature of world history.

HIST 7710. Colloquium on Gender in History. 3 hours.
Recent scholarship on gender in a geographic area. The time period of the subject matter will vary with the instructor.

HIST 7720. Colloquium in Warfare in History. 3 hours. Repeatable for maximum 9 hours credit.
The history of warfare in the context of the warring societies from ancient to modern times. Topics depend on interest of the instructor.

HIST 7750. Colloquium in Environmental History. 3 hours.
Introduction to the discipline of environmental history. Readings will seek to expose students to the variety of methodological approaches employed by environmental historians. Though much of the reading will focus on the United States environmental history, there will also be a significant world component to the course.

HIST 7900. Theory and Practice of History. 3 hours.
Methods of research and fundamental theoretical issues pertaining to practicing the science of history, with emphasis on the development of writing skills.

HIST 7910. Teaching History in Colleges and Universities. 3 hours.
The variety of methods appropriate to instruction in college-level survey history courses. Students will develop syllabi and course materials in preparation for teaching their own surveys.

HIST 7920. Independent Reading Colloquium. 3 hours. Repeatable for maximum 6 hours credit.
Readings on major themes in the history and historiography of a geographical area or topic. Time period, area, and topic will vary with the instructor. Offered on request.

(HIST)EDHI 8000. History of American Higher Education. 3 hours.
Development and scope of American higher education.

HIST 8010. Seminar in Early American History. 3 hours. Repeatable for maximum 6 hours credit.
A research seminar in early American history. Native Americans, Spanish and French borderlands, British settlement, elaboration of colonial institutions, colonial wars, the American Revolution, and the rise of the new nation.

HIST 8020. Seminar in Middle Period United States History. 3-15 hours. Repeatable for maximum 15 hours credit.
A research seminar in which students should produce a potentially publishable paper upon some topic relating to the American South, the American Civil War, or Reconstruction.

HIST 8025. Nineteenth-Century American Community History. 3 hours.
Prerequisite: Permission of department.
This course on American community studies in the nineteenth century explores the study of human relationships in a particular locale as effected by larger questions: war, race relations, gender and class conflict, industrial change. It considers public as well as private space; the mental world of individuals in relation to their communities, as well as the social, political, and economic ideology of communities.

HIST 8027. United States Women, Politics, and History. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
This interdisciplinary course investigates reform and the changing meaning of gender from the Colonial to Post Modern period. An emphasis upon real rather than ideological politics is the focus of discussions of change and continuity. Other major themes include the meaning of politics and the evolution of women's politics.

HIST 8030. Seminar in Recent United States History. 3 hours.
Social, intellectual, cultural, and political developments in United States history since 1900.

HIST 8300. Seminar in Premodern Europe. 3 hours. Repeatable for maximum 12 hours credit.
Selected topics in premodern European history.

HIST 8310. Seminar in Early Modern Europe. 3 hours.
Research seminar that will allow graduate students to work extensively on a particular theme in early modern European history, 1350-1815.

HIST 8320. Seminar in Nineteenth-Century European History. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Selected research topics in nineteenth-century European diplomatic, political, social, economic, and intellectual history. Topics vary.

HIST 8330. Seminar in Twentieth-Century Europe. 3 hours. Repeatable for maximum 9 hours credit.
Research in twentieth-century European history. Topics will vary according to the interests of the students and instructors.

HIST 8860. Seminar in History. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: HIST 7900 or permission of department.
Seminar in historical or historiographical subjects for second-year masters and doctoral students.

HIST 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

HIST 9010. Directed Study in History. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: HIST 7900 and permission of department.
Directed study for Ph.D. students who have completed all required courses and are preparing for written and oral preliminary examinations.

HIST 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Linguistics

William G. Provost, *Graduate Coordinator,*
542-2228
(Gilbert Hall)

The Linguistics Program at the University of Georgia is an interdisciplinary program with twenty-six faculty members from nine departments in the Franklin College of Arts and Sciences and six in the College of Education. We offer the MA and the PhD degrees. For further information, please consult the program's Web page at http://www.linguistics.uga.edu, or contact the Director, Linguistics Program, Athens, GA 30602-1805. FAX: 706-542-2897. E-mail to request information: lklang@uga.edu. E-mail to contact the Director: wprovost@uga.edu.

Our graduate program is comprised of five tracks of study from which students may choose to satisfy degree requirements: 1) Second Language Acquisition, 2) Cognitive Aspects of Linguistics, 3) Historical Linguistics, and 4) Language Variation and Sociolinguistics. At the MA level only, we ofter a track in Humanities Computing.

Second Language Acquisition offers a curriculum which treats the theoretical bases for SLA and is particularly directed at training for college-level language teaching. Students may follow established course sequences for French, Spanish, or German, or may assemble an appropriate set of courses to concentrate on another language. The University of Georgia offers MEd and PhD degrees in TESOL and Foreign Language Education through the Language Education Department of the College of Education.

The Cognitive Aspects of Linguistics track includes the study of theoretical models that show how humans understand language. In conjunction with the Departments of Computer Science and Philosophy, and with the Artificial Intelligence Program, the Linguistics Program offers a computer-based track that requires a solid knowledge of computers and programming. Also available is a cognitive linguistics curriculum that does not require intensive work with computers.

Historical Linguistics involves both the methodology for comparison and reconstruction of historical languages and an intense, hermeneutic approach to studying ancient languages individually. Students may acquire a close familiarity with the sounds, grammar, and vocabulary of languages like ancient Greek, Sanskrit, Latin, Old Church Slavic, Classical Armenian, Old English, and many others.

Language Variation and Sociolinguistics provides its students with training in empirical linguistics, including the s tudy of the methods commonly used in research on language as people speak it. Courses in this track range from "American English" and "Language Use in the

African American Community" to "Discourse Analysis" and "Language, Gender, and Culture." This degree track provides training in Humanities Computing, in addition to courses which establish a strong foundation in Linguistics with competence in one of the other tracks.

(LING)ENGL 4000/6000. History of the English Language. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The development of present English through the stages of Old English, Middle English, and early Modern English. Study of elementary phonetics, phonemics, sound change, and dialect variation.

(LING)ENGL 4010/6010. American English. 3 hours.
Undergraduate prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
The history, present status, and future prospects of American English, including standards and internal variation.

(LING)ENGL 4060/6060. Old English. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The language and literature of England before the Norman Conquest, with reading of selected texts.

(LING)ANTH 4090/6090. Cognitive Anthropology. 3 hours.
Undergraduate prerequisite: ANTH 1102 or permission of major.
Folk systems of knowledge, with an emphasis on how people in different societies culturally identify, define, label, and classify phenomena such as color terms, plants, animals, and other environmental resources.

(LING)ENGL 4100/6100. Lexicography. 3 hours.
Undergraduate prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
Principles and methods of dictionary making with emphasis on monolingual English and bilingual dictionaries. Topics may include typology of dictionaries and dictionary users, the history of lexicography, the collection and selection of headwords and examples; the definition style, pronunciation, labeling, translation equivalents, etymology, illustrations, and encyclopedic information.

(LING)ENGL 4110/6110. English Grammar. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
English grammar in the scholarly tradition of Curme and Jespersen.

(LING)CMSD 4120/6120. Anatomy and Physiology of Speech, Voice, and Hearing. 3 hours.
Undergraduate prerequisite: Permission of department.
Anatomical structures and basic physiological functions underlying audition, respiration, phonation, articulation, resonance, and swallowing.

(LING)CMSD 4140/6140. Introduction to Speech and Voice Science. 3 hours.
Undergraduate prerequisite: CMSD 4090/6090 and CMSD(LING) 4120/6120 and PSYC 1101 and (MATH 1101 or PHYS 1010 or permission of department).
Application of basic physical principles to production and perception of speech and voice. Biomechanics of vocal fold oscillation; acoustics of voice source; resonance; acoustic phonetics; psychoacoustics of speech and voice. Interpretation of objective measures and outputs of computational models.

(LING)GREK(LATN) 4150/6150. Comparative Grammar of Greek and Latin. 3 hours.
Undergraduate prerequisite: LATN 3010 or GREK 2002 or permission of department.
Graduate prerequisite: Pass on Classics Department Greek or Latin proficiency exam or permission of department.
The positions of Greek and Latin within the Indo-European language family with special attention to the phonological evolution of both Greek and Latin from Proto-Indo-European.

(LING)ENGL 4170/6170. Second Language Acquisition. 3 hours.
Undergraduate prerequisite: ENGL(LING) 3030 or ENGL(LING) 4110/6110 or LING 2100.
Linguistic theories of second language acquisition, with emphasis on the acquisition of English. Topics include order of acquisition, sociocultural factors with linguistic bases, and neurolinguistic models.

(LING)ENGL 4180/6180. ESL Error Analysis. 3 hours.
Undergraduate prerequisite: ENGL(LING) 3030 or ENGL(LING) 4110/6110 or LING 2100.
Psycholinguistic theory applied to problems in second language learning, and the prediction of language behavior through the use of contrastive analysis.

LING 4210/6210. Introduction to Indo-European Studies. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
The Indo-European language family: the various early Indo-European dialects, their grammatical structures, and the evolution of those structures from the proto-language.

(LING)PHIL 4300/6300. Philosophy of Language. 3 hours.
Undergraduate prerequisite: (PHIL 2500 and any 3000-level PHIL course) or permission of department.
Topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism, and the uses of language.

(LING)CMSD 4500/6500. Study of Language Development. 3 hours.
Undergraduate prerequisite: Permission of department.
Normal development of children's reception, integration, and expression of linguistic information; cultural, gender, socioeconomic, cognitive, and prelinguistic influences on language development.

(LING)PHIL 4510/6510. Deductive Systems. 3 hours.
Undergraduate prerequisite: PHIL 2500 or permission of department.
Symbolic-mathematical logic, examining the propositional and predicate calculi, with emphasis on problems in translation and formalization and topics in the philosophy of logic and mathematics.

(LING)PHIL 4520/6520. Model Theory. 3 hours.
Prerequisite: PHIL(LING) 4510/6510 or permission of department.
Formal semantics for sentential and first-order predicate logic, including both soundness and completeness results for first-order logic. Additional topics may include Goedel's incompleteness results, the Skolem-Lowenheim theorem, or possible world semantics for modal logics.

LING(CLAS) 4610/6610. Sanskrit I. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL (LING) 3030 or permission of department.
The phonology, morphology, and syntax of the classical Sanskrit language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

LING(CLAS) 4620/6620. Sanskrit II. 3 hours.
Undergraduate prerequisite: LING(CLAS) 4610/6610.
Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

LING 4690/6690. Historical Linguistics. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
Traditional methods of historical linguistics are reviewed, with examples from several different language families. Various kinds of possible phonological and syntactic changes are investigated in relation to modern linguistic theory.

LING 4710/6710. Languages in Contact. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL (LING) 3030 or permission of department.
The influence of languages on other languages spoken in the same or neighboring areas, including pidgins and creoles, with consideration of relationships in phonology, morphology, syntax, semantics, and vocabulary.

LING(CMLT) 4740/6740. Discourse Analysis. 3 hours.
Undergraduate prerequisite: LING 2100 or permission of department.
An interdisciplinary study of language use, text analysis, and evaluation. The course will provide students with the ability to investigate and evaluate structural features of language and to identify the strategies used by different writers based on style and cultural backgrounds.

LING(ANTH) 4860/6860. Sociolinguistics. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL (LING) 3030 or ANTH(LING) 3080 or permission of department.
The study of language as a cultural and social phenomenon. Topics include language and meaning, language and world view, language and social behavior, and language and social issues.

LING(CMLT) 4870/6870. Language, Gender, and Culture. 3 hours.
Undergraduate prerequisite: LING 2100 or ENGL (LING) 3030 or permission of department.
The role of language and culture in the formation of philosophical assumptions about gender differentiation in society.

LING 4900/6900. Topics in Indo-European Linguistics. 3-9 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: LING 2100 or ENGL (LING) 3030 or permission of department.
The synchronic and diachronic grammar of an older Indo-European language. Possible offerings include Avestan, Hittite, Lithuanian, Old Church, Slavic, and Old Irish or topics such as Indo-European phonology, morphology, or syntax.

LING 4920/6920. Less-Taught Languages I. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
Study of the phonology, morphology, syntax, and culture of a less-taught language. Possible offerings include Finnish, Hungarian, and other non-Indo-European languages. This course cannot be used in partial fulfillment of the foreign language requirement in the core curriculum.

LING 4930/6930. Less-Taught Languages II. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: LING 2100 or ENGL (LING) 3030 or permission of department.
Study of the phonology, morphology, syntax, and culture of a less-taught language. Possible offerings include Finnish, Hungarian, and other non-Indo-European languages. This course cannot be used in partial fulfillment of the foreign language requirement in the core curriculum.

(LING)(AFAM)ENGL 6040. Language Use in the African American Community. 3 hours.
Prerequisite: Permission of department.
History and structure of the speech and language styles used in the African American community; examination of linguistic and cultural issues that confront the majority of African Americans; the role of the vernacular language of African Americans in society.

(LING)ENGL 6070. Middle English. 3 hours.
Prerequisite: ENGL(LING) 4000/6000 or ENGL (LING) 4060/6060 or permission of department.
The English language of the Middle English period, including the development of the language from the end of the Old English period through the transition to Modern English.

(LING)GRMN 6380. Contrastive Grammar: German-English. 3 hours.
Identification and examination of the salient structural similarities and differences between German and English.

(LING)SPAN 6550. History of the Spanish Language. 3 hours.
The major linguistic changes in the history of the Spanish language, including the interaction of linguistic and societal changes and the representation of these changes in texts.

LING 6570. Applied Natural Language Processing. 3 hours.
Not open to students with credit in CSCI(LING) 8570.
Computer processing of human languages, intended for linguists with a variable amount of previous computer experience. Emphasis is on use of existing software rather than programming.

(LING)GRMN 6600. History of the German Language. 3 hours.
The origins of modern standard German from the Indo-European parent language through proto-Germanic, Old and Middle High German, and the early modern period.

(LING)FREN 6630. The French Sound System in a Social Context. 3 hours.
French phonetics: the sounds of French as they relate to levels of language from the vernacular to literature. An examination of how sounds vary with relation to region and social class. Practice in class and in the language laboratory. Given in French.

(LING)SPAN 6650. Spanish Phonetics and Phonology. 3 hours.
The Spanish sound system using core concepts of linguistics in general and phonology in particular. Characterization and transcription of spoken Spanish. Analysis of important phenomena of language variation in the Hispanic world, including national, geographical, historical, and social dialects. Given in Spanish.

(LING)FREN 6700. Applied French Linguistics. 3 hours.
Phonology of French as it determines the underlying forms of morphology with an application to the teaching of French to non-native speakers. Emphasis on the concepts of variation, acceptability, and cultural sensitivity. Given in French.

(LING)SPAN 6750. Spanish Syntax and Morphology. 3 hours.
Grammar and language usage in the study of the syntactic and morphological structures of Spanish. The syntax and morphology of the pronoun and verb systems, agreement phenomena, gerunds, comparisons, and modal and aspectual distinctions. Written self-expression on a variety of issues as practical application of grammatical structures discussed in class. Given in Spanish.

(LING)FREN 6800. French Syntax and Meaning. 3 hours.
The syntax of modern French through readings in descriptive analysis and examples of literary texts to see how word order contributes to meaning. Particular emphasis on levels of style and reflections of social class. Frequent compositions required. Given in French.

(LING)GRMN 6810. German Phonology and Morphology. 3 hours.
Theoretical and applied German phonology and word structure. Taught in English.

(LING)SPAN 6850. Spanish Applied Linguistics. 3 hours.
Phonetic and morpho-syntactic structures that are problematic for the English-speaking student of Spanish. Ways in which culture is encoded in language. Implications of Spanish linguistics for the teaching and learning of Spanish and the linguistic education of language teachers. Given in Spanish.

(LING)FREN 6910. History of the French Language in its Social and Literary Context. 3 hours.
The major changes in the history of the French language, with special attention to the interaction of linguistic and societal changes and to the representation of these changes in literary texts. Given in French.

(LING)SPAN 6950. Spanish Semantics and Pragmatics. 3 hours.
Semantic and pragmatic approaches to the study of meaning in Spanish. Differences between sentence meaning and speaker meaning. Analysis of types of discourse in Spanish such as narrative and free conversation. Given in Spanish.

LING 7000. Master's Research. 3-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

LING 7300. Master's Thesis. 3-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

(LING)GRMN 7500. Problems and Methods of Teaching College German. 3 hours.
Methods for teaching foreign language and development of language skills in German. For teaching assistants in German and graduate students in German and Language Education. Taught in English.

(LING)FREN 7700. Teaching College French. 3 hours.
Principles and methods of second language teaching applied to French. An analysis of techniques used to teach listening, speaking, reading, writing, and culture, with an examination of current theories of language acquisition. Given in French.

(LING)SPAN 7750. Teaching College Spanish. 3 hours.
Foreign language teaching and learning applied to Spanish. Theories of second language acquisition. Techniques and strategies to teach listening, speaking, reading, writing, and culture in context. Activities and procedures of classroom instruction. Issues in the professionalization of Spanish teachers. Given in Spanish.

(LING)ROML 8000. Topics in Romance Languages. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Specific aspects of Romance languages, linguistics, literatures, or cultures.

(LING)SPAN 8010. Topics in Culture, Language, Linguistics, and Literature of the Spanish-Speaking World Seminar. 3 hours. Repeatable for maximum 9 hours credit.
An intensive, integrative, and contextualized study of a specific representative topic in language, literature, culture, and linguistics of the Spanish-speaking world. Given in Spanish.

LING 8020. Language Variation. 3 hours.
Regional and social language variation within one language, including the relationship between variation and language change. Historical and present-day illustrations come primarily from English, with consideration of the significance of language variation in our modern social context.

(LING)CMSD 8050. Seminar: Language Acquisition and Disorders. 3 hours.
Prerequisite: Permission of department.
Recent issues and research in language acquisition and disorders. Major theories of development, assessment, and intervention, with emphasis on integration of theory and clinical practice.

LING 8060. Phonetics and Phonology. 3 hours.
Not open to students with credit in GRMN(LING) 6810.
Phonetic transcription of various languages dictated by native and non-native speakers; understanding of the phonemic principle by the solution of selected problems which consist of phonetically transcribed data.

LING 8070. Advanced Generative Phonology. 3 hours.
Prerequisite: LING 8060 or permission of department.
The formal nature of phonological rules and representations and how they interact to delimit possible real language phonologies, with attention given to such phenomena as syllabification, tone, and vowel harmony.

LING 8080. Seminar in Linguistic Theory. 3 hours. Repeatable for maximum 9 hours credit.
Special topics and current issues in linguistic theory.

LING 8120. Morphology. 3 hours.
Grammatical analysis of phonemically transcribed data from numerous languages of the world.

(LING)EPSY(PSYC) 8130. Psycholinguistics. 3 hours.
Recent theoretical and experimental work on the psychological aspects of semantics, grammar, and discourse processes are surveyed. Language development is also considered.

LING 8150. Generative Syntax. 3 hours.
Techniques and formalisms for analyzing syntactic phenomena of human languages within the framework of generative grammar. Examples will be drawn from English.

LING 8160. Advanced Generative Syntax. 3 hours.
Prerequisite: LING 8150.
Formal analysis of syntactic phenomena, such as the passive construction, question formation, and relative clauses, with examples drawn primarily from English.

LING 8250. Teaching College Second Language Courses. 3 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in FREN(LING) 7700 or GRMN(LING) 7500 or SPAN(LING) 7750.
The teaching of college second language courses, most often for new teaching assistants in less-common languages.

LING 8280. Seminar in Second Language Acquisition. 3 hours. Repeatable for maximum 9 hours credit.
Special topics and current issues in second language acquisition. Topics will vary; consult the Linguistics Program office for the specific topics to be covered in any offering of the seminar.

(LING)PHIL 8300. Seminar in the Philosophy of Language. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
The original course materials dealing with such topics as formal and ordinary languages, meaning, reference, descriptions, truth, definition, analyticity, speech acts, and the uses of language.

(LING)GRMN 8320. Gothic. 3 hours.
Morphology, phonology, and history of the Gothic language based on extant texts. Emphasis on the development of earlier stages of the language and on its later language forms. Taught in English.

(LING)CMSD 8360. Advanced Speech and Voice Science. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: [(CMSD(LING) 4140/6140 or CMSD 4150/6150)] and CSCI 1100-1100L and permission of department.
Designed for students at the early stages of thesis or dissertation planning. Specific topics vary depending on student/faculty interests. Lecture/discussion format to present research approaches to acoustic phonetics, voice science, and psychoacoustics. Emphasis on available instrumentation, measurement standards, psychophysics, and issues in signal processing of speech and voice.

(LING)CMSD 8360L. Laboratory in Advanced Speech and Voice Science. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: CMSD(LING) 8360 and permission of department.
Hands-on laboratory exercises emphasizing digital recording techniques and signal conditioning; spectral, spectrographic, and aerodynamic measures of speech and voice; indirect measures of laryngeal vibration; computational models of peripheral auditory processing.

(LING)GRMN 8400. Middle High German. 3 hours.
Phonology and grammar of the language, with extensive readings in the prose, epic, and lyric poetry of the Middle High German era.

LING 8480. Seminar in Cognitive Linguistics. 3 hours. Repeatable for maximum 9 hours credit.
Special topics and current issues in cognitive aspects of linguistics.

(LING)GRMN 8510. Seminar in German Linguistics. 3 hours. Repeatable for maximum 9 hours credit.
Intensive investigation of a subject or topic in German linguistics. Taught in English.

(LING)GRMN 8520. Seminar in German Language Variation. 3 hours. Repeatable for maximum 9 hours credit.
Intensive investigation of synchronic and diachronic variation in German. Taught in English.

(LING)SPCM 8530. Language and Communication Behavior. 3 hours.
Surveys linguistic aspects of human interaction. Examines language patterns such as orality, intensity, immediacy, and power. Analyzes conversational data as well as language structures in public messages.

(LING)CSCI 8570. Natural Language Processing Techniques. 4 hours.
Prerequisite: [CSCI(ARTI) 4540/6540 and LING 8150] or permission of department.
Human language from a computational point of view; algorithms and techniques for computer understanding of human-language input.

LING 8680. Seminar in Historical Linguistics. 3 hours. Repeatable for maximum 9 hours credit.
Special topics and current issues in historical linguistics.

(LING)FREN 8800. Seminar in French Linguistics. 3 hours. Repeatable for maximum 9 hours credit.
Topics and issues in French linguistics. Possible offerings include Old French, French dialectology, French sociolinguistics, and French semantics and pragmatics. Given in French.

(LING)ANTH 8880. Field Methods in Linguistics. 3 hours.
Prerequisite: Permission of major.
The techniques of recording and analyzing a foreign language by working directly with a native speaker.

LING 8980. Seminar in Language Variation and Sociolinguistics. 3 hours. Repeatable for maximum 9 hours credit.
Special topics and current issues in language variation and sociolinguistics.

LING 9000. Doctoral Research. 3-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

LING 9010. Directed Readings in Linguistics. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Advanced directed study of a topic in linguistics.

LING 9300. Doctoral Dissertation. 3-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Marine Sciences

James T. Hollibaugh, *Head*
Mary Ann Moran, *Graduate Coordinator,*
542-6481
(Marine Sciences Building)

The Department of Marine Sciences supports MS and PhD programs. Courses of study are currently offered in the biological, chemical, and physical areas of marine science. Graduate students have access to the extensive field and laboratory facilities of the School of Marine Programs in Athens and at Sapelo Island, Skidaway Island, and Brunswick on the Georgia coast.

MARS 4100/6100. Physical Processes of the Ocean. 3 hours.
Undergraduate prerequisite: PHYS 1112-1112L.
Oceanographic principles of the geological and physical structure, composition, and processes of the ocean with emphasis on general oceanic circulation, water properties, waves and tides, coastal physical processes, turbulent mixing, sediment transport.

(MARS)ENGR 4113/6113-4113L/6113L. Introductory Geophysical Fluid Dynamics with Applications. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MATH 2500 and MATH 2700 and PHYS 1212-1212L and (GEOG(ENGR) 4112/6112 or MARS 4100/6100).
Second semester fluid dynamics course for graduate students and advanced undergraduates emphasizing quasi-geostrophic dynamics, balance models, Rossby, Kelvin and gravity waves, barotropic, baroclinic, inertial and convective instabilities, and the general circulation of rotating stratified fluids. Applications made to weather forecasting and ocean dynamics. Laboratory includes hands-on experiments and simulations.

(MARS)ENGR 4175/6175. Coastal Meteorology. 3 hours.
Undergraduate prerequisite: MATH 2500 and PHYS 1212-1212L and (MARS 1010-1010L or GEOG 1112).
Undergraduate prerequisite or corequisite: MATH 2700.
An introduction to air-sea-land interactions that occur at the boundaries of continents. The course will cover atmospheric radiation, thermodynamics, and hydrodynamics, mesoscale and synoptic scale weather systems, atmospheric boundary layers, and applications to engineering meteorology.

MARS 4200/6200. Chemical and Biological Oceanography. 3 hours.
Not open to students with credit in MARS 4110/6110.
Undergraduate prerequisite: BIOL 1108-1108L and CHEM 1211 and CHEM 2211.
Chemical composition, dynamics, and processes of life in the oceans and the role the life of the oceans plays in global processes.

MARS(FORS) 4380/6380-4380L/6380L. Marine Fisheries Biology. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L and permission of department.
Interaction of oceanographic processes with the life histories and productivity of marine fisheries species, and the human interactions with major marine fisheries.

MARS 4450/6450. Introduction to Marine Chemistry. 3 hours.
Not open to students with credit in MARS 8020-8020L.
Undergraduate prerequisite: CHEM 1212 and CHEM 1212L and PHYS 1212-1212L and MATH 2200 and MATH 2200L and MARS 4110/6110.
Chemical properties of oceanic systems, oceanic acid base equilibrium, redox chemistry, nutrient cycling, and radioactive processes.

MARS 4500/6500. Field Study in Oceanography and Marine Methods. 5 hours. 15 hours lecture and 25 hours lab per week.
Undergraduate prerequisite: Permission of department.
Laboratory and fieldwork in chemical, biological, sedimentological, and physical oceanographic processes and methods in southeast esturaine, coastal, and shelf environments.

MARS 4510/6510. Field Study in Oceanography and Marine Methods: Independent Research. 3-7 hours. Repeatable for maximum 7 hours credit. 40 hours lab per week.
Undergraduate prerequisite: Permission of department.
Independent field research on oceanographic processes.

MARS(MIBO) 4620/6620-4620L/6620L. Microbial Ecology. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: MIBO 3500 or permission of department.
Emphasizes the roles of microorganisms in ecosystems. Nutrient cycles, methods of microbial analysis, and the functional roles of microorganisms.

MARS 4810/6810. Microbial Biogeochemistry. 3 hours.
Undergraduate prerequisite: [MIBO 3500 and BCMB (BIOL)(CHEM) 3100] or permission of department.
The microbial processes which are or have been important in modifying the earth's lithosphere, hydrosphere, and atmosphere. Microbially mediated precipitation and solubilization of minerals, cycling of dissolved and particulate organic matter in natural waters, and the physiological ecology of microorganisms adapted to extreme environments.

MARS 6761. Contaminated Sediment Geochemistry. 3 hours.
Prerequisite: MARS 4200/6200 or MARS 8020-8020L.
Examination of the fate of major pollutants, nutrients, organic compounds, such as pesticides and PAH's and trace metals, in sedimentary systems. Principles governing geochemical characteristics of sediments that determine transport, bioavailability, decomposition and speciation of these pollutants will be integrated through the development and analysis of models of reaction and transport.

MARS 7000. Master's Research. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

MARS 7300. Master's Thesis. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

MARS 7360. Teaching Internship in Marine Sciences. 1-2 hours. Repeatable for maximum 8 hours credit. 2-4 hours lab per week.
Prerequisite: ELAN 7768.
Corequisite: ELAN 7769.
Classroom teaching experience in undergraduate courses under the direct supervision of a faculty member.

MARS 8010. Biological Oceanographic Processes. 3 hours.
Prerequisite: Permission of department.
Major biological processes in the water column and sediments of estuarine, coastal, and open sea environments, with emphasis on interactions of biota with marine chemical and physical processes.

MARS 8020-8020L. Chemical Oceanography. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: CHEM 1212 and CHEM 1212L and PHYS 1112-1112L and MATH 2210 and MATH 2210L.
The chemical forms, distributions, and reactivities of major and minor elements in seawater. The use of chemical tracers to investigate biological and physical processes in the ocean.

MARS 8030. General Physical Oceanography. 3 hours.
Prerequisite: (MATH 2500 and PHYS 1112-1112L) or permission of department.
Oceanic circulation and elementary dynamical principles. Major topics include observed physical properties of the world's oceans, geostrophy, and vorticity.

MARS 8100. Estuarine and Coastal Physical Oceanography. 3 hours.
Prerequisite: MARS 8030 or permission of department.
The distribution of suspended and dissolved material in estuarine and coastal waters. Role of tidal currents, winds, and freshwater discharge. Physical processes leading to mixing in estuarine and shallow coastal water. Field and laboratory collection and analysis of estuarine data.

MARS 8110. Marine Sediment Diagenesis. 3 hours.
Prerequisite: (MARS 8020-8020L and MATH 2500) or permission of department.
Nature and properties of marine sediment pore waters and surface sediments. Chemical, physical, and biological processes controlling sediment pore water chemistry and the alteration and recycling of recently deposited sedimentary materials.

MARS 8120. Geophysical Fluid Dynamics. 3 hours.
Prerequisite: (MARS 8030 and MATH 2700 and PHYS 1212-1212L) or permission of department.
Fundamental geophysical fluid dynamics of small, medium, and large scale rotating stratified fields. Derivation of the navier-stokes equation, dimensional analyses, quasi-geostrophic approximation, potential vorticity principles, buoyancy-driven flows.

MARS 8130. Seminar in Hydrobiology. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Weekly meetings for discussion of current research in marine and freshwater biology and related areas.

MARS 8140. Organic Geochemistry. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L and GEOL 1260-1260L.
The use of specific organic marker compounds as probes for biological and geochemical processes. Early diagenesis of lipids and other biochemicals. Molecular markers for paleoceanographic conditions. Preservation of organic matter and petroleum formation.

MARS 8150. Ocean Waves. 3 hours.
Prerequisite: (MARS 8030 and MATH 2700 and PHYS 1212-1212L) or permission of department.
Physics and mathematics of wave motions in the ocean. Kinetics of waves, phase and group velocities, frequency and wave number dispersion, instabilities, barotropic and baroclinic wave forcing, gravity waves, vorticity waves, internal waves, tides, kelvin waves, planetary rossby waves. Time series and spectral analysis as oceanographic experimental tools.

MARS 8160. Marine Ecology. 3 hours.
Prerequisite: ECOL(BIOL) 3500-3500L or permission of department.
The ecology of organisms, populations, and communities occurring in marine environments.

MARS 8170. Ocean Mixing Processes. 3 hours.
Prerequisite: MARS 8030 or permission of department.
The physics and parameterization of turbulent flows. Studies of boundary-free shear flows and boundary mixing. Statistical analysis of turbulent transport (including diffusion and mixing) and turbulent spectra. Observational techniques will be described.

MARS(ANTH) 8210. Topics in Coastal Marine Policy. 3 hours.
Prerequisite: ECOL(BIOL) 3500-3500L or permission of department.
Coastal marine policy approached from scientific, legal, and anthropological perspectives. This interdisciplinary course provides a general background in coastal policy, and uses a case study approach to examine current topics in marine resource management. Topics include: coastal zone management, coastal groundwater supply, coastal fisheries, development in the coastal zone.

MARS 8990. Advanced Topics in Marine Sciences. 1-3 hours. Repeatable for maximum 6 hours credit.
Analysis of contemporary themes in marine sciences.

MARS 9000. Doctoral Research. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

MARS 9300. Doctoral Dissertation. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Mathematics

Dhandapani Kannan, *Head*
Joseph H. G. Fu, *Graduate Coordinator,*
542-2562
(Boyd Graduate Studies Research Center)

The Department of Mathematics offers graduate programs of study leading to the PhD (Doctor of Philosophy) degree, MA (Master of Arts) degree, and MAMS (Master of Applied Mathematical Sciences) degree. The purpose of the PhD program is to develop students into research and teaching mathematicians. The MA program trains students for careers outside the standard university environment. The MAMS program is an interdepartmental program designed to train mathematically skilled students for careers in industry, business, and government. The department offers instruction and research training in the areas of algebra, analysis, applied mathematics, (ordinary, partial, stochastic) differential equations, (algebraic, differential, and integral) geometry, mathematical physics, number theory, numerical analysis, probability and stochastic processes, and topology. Financial aid in the form of assistantships is available to students admitted into the graduate program; this support will be continued as long as the student makes timely progress and maintains a satisfactory academic record. Additionally, the department offers every year the Wills Memorial Scholarship, in the amount of $2500, to a student making outstanding progress towards his or her PhD.

MATH 4000/6000. Modern Algebra and Geometry I. 3 hours.
Undergraduate prerequisite: (MATH 3000 or MATH 3500) and (MATH 3200 or MATH 3610).
Abstract algebra, emphasizing geometric motivation and applications. Beginning with a careful study of integers, modular arithmetic, and the Euclidean algorithm, the course moves on to fields, isometries of the complex plane, polynomials, splitting fields, rings, homomorphisms, field extensions, and compass and straightedge constructions.

MATH 4010/6010. Modern Algebra and Geometry II. 3 hours.
Undergraduate prerequisite: MATH 4000/6000.
More advanced abstract algebraic structures and concepts, such as groups, symmetry, group actions, counting principles, symmetry groups of the regular polyhedra, Burnside's Theorem, isometries of R^3, Galois Theory, and affine and projective geometry.

MATH 4050/6050. Advanced Linear Algebra. 3 hours.
Undergraduate prerequisite: MATH 4000/6000.
Orthogonal and unitary groups, spectral theorem; infinite dimensional vector spaces; Jordan and rational canonical forms and applications.

MATH 4080/6080. Advanced Algebra. 3 hours.
Undergraduate prerequisite: MATH 4010/6010 or permission of department.
Linear algebra, groups, rings, and modules, intermediate in level between Modern Algebra and Geometry II and Algebra. Topics include the finite-dimensional spectral theorem, group actions, classification of finitely generated modules over principal ideal domains, and canonical forms of linear operators.

MATH 4100/6100. Real Analysis. 3 hours.
Undergraduate prerequisite: MATH 3100 and (MATH 3200 or MATH 3610).
Metric spaces and continuity; differentiable and integrable functions of one variable; sequences and series of functions.

MATH 4110/6110. The Lebesgue Integral and Applications. 3 hours.
Undergraduate prerequisite: MATH 4100/6100 or MATH 4200/6200 or permission of department.
The Lebesgue integral with applications to Fourier analysis and probability.

MATH 4120/6120. Multivariable Analysis. 3 hours.
Undergraduate prerequisite: MATH 3510 or MATH 4100/6100 or MATH 4200/6200.
The derivative as a linear map, inverse and implicit function theorems, change of variables in multiple integrals; manifolds, differential forms, and the generalized Stokes' Theorem.

MATH 4130/6130. Introduction to Functional Analysis. 3 hours.
Undergraduate prerequisite: [MATH 4100/6100 and (MATH 3000 or MATH 3500)] or permission of department.
Introduction to analysis in infinite dimensional vector spacesuseful in mathematics and other disciplines. Topics may be chosen from: metric spaces, completeness and compactness and applications; basic Banach space functionals and operators and applications; basic Hilbert space theory, self-adjoint compact operators, and applications.

MATH 4150/6150. Complex Variables. 3 hours.
Undergraduate prerequisite: (MATH 2500 and MATH 3100) or MATH 3510.

Differential and integral calculus of functions of a complex variable, with applications. Topics include the Cauchy integral formula, power series and Laurent series, and the residue theorem.

MATH 4200/6200. Point Set Topology. 3 hours.
Undergraduate prerequisite: MATH 3100 and (MATH 3200 or MATH 3610).
Topological spaces, continuity; connectedness, compactness; separation axioms and Tietze extension theorem; function spaces.

MATH 4220/6220. Differential Topology. 3 hours.
Undergraduate prerequisite: MATH 4120/6120 and (MATH 4100/6100 or MATH 4200/6200).
Manifolds in Euclidean space: fundamental ideas of transversality, homotopy, and intersection theory; differential forms, Stokes' Theorem, deRham cohomology, and degree theory.

MATH 4250/6250. Differential Geometry. 3 hours.
Undergraduate prerequisite: (MATH 2500 and MATH 3000) or MATH 3510.
The geometry of curves and surfaces in Euclidean space: Frenet formulas for curves, notions of curvature for surfaces; Gauss-Bonnet Theorem; discussion of non-Euclidean geometries.

MATH 4300/6300. Introduction to Algebraic Curves. 3 hours.
Undergraduate prerequisite: MATH 4000/6000 or permission of department.
Polynomials and resultants, projective spaces. The focus is on plane algebraic curves: intersection, Bezout's theorem, linear systems, rational curves, singularities, blowing up.

MATH 4400/6400. Number Theory. 3 hours.
Undergraduate prerequisite: MATH 4000/6000.
Euler's theorem, public key cryptology, pseudoprimes, multiplicative functions, primitive roots, quadratic reciprocity, continued fractions, sums of two squares and Gaussian integers.

MATH 4450/6450. Cryptology and Computational Number Theory. 3 hours.
Undergraduate prerequisite: MATH 4000/6000.
Recognizing prime numbers, factoring composite numbers, finite fields, elliptic curves, discrete logarithms, private key cryptology, key exchange systems, signature authentication, public key cryptology.

MATH 4500/6500. Numerical Analysis I. 3 hours.
Undergraduate prerequisite: MATH 3000 or MATH 3500.
Undergraduate prerequisite or corequisite: MATH 3100.
Methods for finding approximate numerical solutions to a variety of mathematical problems, featuring careful error analysis. A mathematical software package will be used to implement iterative techniques for nonlinear equations, polynomial interpolation, integration, and problems in linear algebra such as matrix inversion, eigenvalues and eigenvectors.

MATH 4510/6510. Numerical Analysis II. 3 hours.
Undergraduate prerequisite: (MATH 2500 or MATH 3510) and MATH 2700 and MATH 4500/6500.
Numerical solutions of ordinary and partial differential equations, higher-dimensional Newton's method, and splines.

MATH 4550/6550. Computer-Aided Curves and Surfaces Design. 3 hours.
Undergraduate prerequisite: MATH 2500 or MATH 3510.
Bezier curves and spline curves, tensor product Bezier and splinesurfaces, Bezier triangular surfaces and triangular spline surfaces, Coons patches, basic differential geometry for curves and surfaces, computer implementation of these curves and surfaces.

MATH 4600/6600. Probability. 3 hours.
Undergraduate prerequisite: (MATH 2500 and MATH 3100) or MATH 3510.
Discrete and continuous random variables, expectation, independence and conditional probability; binomial, Bernoulli, normal, and Poisson distributions; law of large numbers and central limit theorem.

MATH(CSCI) 4630/6630. Mathematical Analysis of Computer Algorithms. 3 hours.
Undergraduate prerequisite: MATH 3000 and (CSCI(MATH) 2610 or MATH 3200 or MATH 3610).
Discrete algorithms (number-theoretic, graph-theoretic, combinatorial, and algebraic) with an emphasis on techniques for their mathematical analysis.

MATH(CSCI) 4670/6670. Combinatorics. 3 hours.
Undergraduate prerequisite: (MATH 3000 or MATH 3500) and (CSCI(MATH) 2610 or MATH 3200 or MATH 3610).
Basic counting principles: permutations, combinations, probability, occupancy problems, and binomial coefficients. More sophisticated methods include generating functions, recurrence relations, inclusion/exclusion principle, and the pigeonhole principle. Additional topics include asymptotic enumeration, Polya counting theory, combinatorial designs, coding theory, and combinatorial optimization.

MATH(CSCI) 4690/6690. Graph Theory. 3 hours.
Undergraduate prerequisite: (MATH 3000 or MATH 3500) and (CSCI(MATH) 2610 or MATH 3200 or MATH 3610).
Elementary theory of graphs and digraphs. Topics include connectivity, reconstruction, trees, Euler's problem, hamiltonicity, network flows, planarity, node and edge colorings, tournaments, matchings, and extremal graphs. A number of algorithms and applications are included.

MATH 4700/6700. Qualitative Ordinary Differential Equations. 3 hours.
Undergraduate prerequisite: MATH 2700 and (MATH 3000 or MATH 3500).
Transform methods, linear and nonlinear systems of ordinary differential equations, stability, and chaos.

MATH 4710/6710. Mathematics of Finance. 3 hours.
Undergraduate prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
The mathematical methods and models used in the fields of financial analysis and actuarial science. Covers the theory of interest, models of financial markets including derivative markets, an introduction to risk and models and actuarial mathematics.

MATH 4720/6720. Introduction to Partial Differential Equations. 3 hours.
Undergraduate prerequisite: MATH 2700 and (MATH 2500 or MATH 3510).
The basic partial differential equations of mathematical physics: Laplace's equation, the wave equation, and the heat equation. Separation of variables and Fourier series techniques are featured.

MATH 4760/6760. Mathematics and Music. 3 hours.
Undergraduate prerequisite: (MATH 2210 or MATH 2310H or MATH 2410H) and (MATH 2500 or MATH 2700).
This course is intended for undergraduates (math majors, music majors, and others) interested in the mathematical aspects of music. At least some familiarity with musical notation is a prerequisite. Topics to be discussed include the structure of sound, the construction of scales, and synthesis. There is a serious writing component.

MATH 4780/6780. Mathematical Biology. 3 hours.
Undergraduate prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
Mathematical models in the biological sciences: compartmental flow models, dynamic system models, discrete and continuous models, deterministic and stochastic models.

MATH 4850/6850. History of Mathematics. 3 hours.
Undergraduate prerequisite: Senior standing.
The development of mathematical thought from ancient times to the present, paying particular attention to the context of today's mathematics curriculum.

MATH 4900/6900. Topics in Mathematics. 3 hours.
Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Senior standing.
A special topic not otherwise offered in the mathematics curriculum.

MATH 5001/7001. Arithmetic and Problem Solving. 3 hours.
Not open to students with credit in MATH 1700.
Topics in mathematics designed for future elementary school teachers. Problem solving. Number systems: whole numbers, integers, rational numbers (fractions) and real numbers (decimals), and the relationships between these systems. Understanding multiplication and division, including why standard computational algorithms work. Properties of arithmetic. Applications of elementary mathematics.

MATH 5002/7002. Geometry and Problem Solving. 3 hours.
Undergraduate prerequisite: MATH 5001/7001.
A deep examination of mathematical topics designed for future elementary school teachers. Length, area, and volume. Geometric shapes and their properties. Probability. Elementary number theory. Applications of elementary mathematics.

MATH 5003/7003. Algebra and Problem Solving. 3 hours.
Prerequisite: MATH 5002/7002.
A deep examination of topics in mathematics that are relevant for elementary school teaching. Probability, number theory, algebra and functions, including ratio and proportion. Posing and modifying problems.

MATH 5020/7020. Arithmetic for Middle School Teachers. 3 hours.
Undergraduate prerequisite: MATH 2200.
Operations of arithmetic for middle school teachers; number systems; set theory to study mappings, functions, and equivalence relations.

MATH 5030/7030. Geometry and Measurement for Middle School Teachers. 3 hours.
Undergraduate prerequisite: MATH 2200.
Principles of geometry and measurement for middle school teachers.

MATH 5035/7035. Algebra for Middle School Teachers. 3 hours.
Undergraduate prerequisite: MATH 2200 and MATH 5020/7020 and MATH 5030/7030.

Algebra for middle school teachers. Relationships between quantities and the interpretation of such relationships numerically, graphically, algebraically, and functionally. Emphasis on problem solving and applications, connections with geometry, arithmetic and data analysis, and math competitions such as Mathcounts.

MATH 5070/7070. Calculus for Advanced Placement Teachers. 3 hours.
Undergraduate prerequisite: MATH 2500 or MATH 3510.
Variable calculus designed to prepare in-service secondary school teachers for effective instruction of advanced placement students. Emphasizes concepts and principles underlying differential and integral calculus of a single variable.

MATH 5200/7200. Foundations of Geometry I. 3 hours.
Undergraduate prerequisite: (MATH 3000 or MATH 3500) and (MATH 3200 or MATH 3610).
Advanced elementary geometry for prospective teachers of secondary school mathematics: axiom systems and models; the parallel postulate; neutral, Euclidean, and non-Euclidean geometries.

MATH 5210/7210. Foundations of Geometry II. 3 hours.
Undergraduate prerequisite: MATH 5200/7200.
Further development of the axioms and models for Euclidean and non-Euclidean geometry; transformation geometry.

MATH 5560/7560. Probability and Statistics for Teachers. 3 hours.
Undergraduate prerequisite: MATH 2200.
Fundamental ideas of probability with particular emphasis on their applications in statistics.

MATH 6800. Directed Reading and/or Projects. 1-6 hours. Repeatable for maximum 30 hours credit.
Directed reading and/or project at the master's level.

MATH 7000. Master's Research. 1-6 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

MATH 7040. Basic Ideas of Calculus I. 3 hours.
Prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
Survey of one-variable calculus in preparation for teaching calculus at the secondary level: combines review of basic techniques with careful study of underlying concepts.

MATH 7050. Basic Ideas of Calculus II. 3 hours.
Prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
A continuation of Basic Ideas of Calculus I focusing on functions of several variables.

MATH 7100. Technical Report. 3 hours.
For use with the Master's degree in Applied Mathematical Science - Mathematics option.

MATH 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

MATH 7900. Foundations for Graduate Mathematics. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
An intensive review of techniques and material essential for graduate study in mathematics, including background in calculus and linear algebra. Emphasis is on small group study and presentations. Topics include proofs, induction, the metric structure of the reals, the Bolzano-Weierstrass theorem, and the diagonalization theorem.

MATH 8000. Algebra I. 3 hours.
Prerequisite: MATH 4010/6010 or permission of department.
Groups and rings, including Sylow theorems, classifying small groups, finitely generated abelian groups, Jordan-Holder theorem, solvable groups, simplicity of the alternating group, euclidean domains, principal ideal domains, unique factorization domains, noetherian rings, Hilbert basis theorem, Zorn's lemma, and existence of maximal ideals and vector space bases.

MATH 8010. Algebra II. 3 hours.
Prerequisite: MATH 8000.
Modules and fields, including noetherian modules, finitely generated modules over principal ideal domains, canonical forms of matrices, spectral theorems, tensor products, algebraic and transcendental field extensions, galois theory, solvability of polynomials, symmetric functions, cyclotomic extensions, finite fields, solution formulas for polynomials of low degree.

MATH 8020. Commutative Algebra. 3 hours.
Prerequisite: MATH 8000.
Localization and completion, Nakayama's lemma, Dedekind domains, Hilbert's basis theorem, Hilbert's Nullstellensatz, Krull dimension, depth and Cohen-Macaulay rings, regular local rings.

MATH 8030. Topics in Algebra. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: MATH 8000 or permission of department.
Topics in abstract algebra at the level of current research.

MATH 8040. Representation Theory of Finite Groups. 3 hours.
Prerequisite: MATH 8010.
Irreducible and indecomposable representations, Schur's lemma, Maschke's theorem, the Wedderburn structure theorem, characters and orthogonality relations, induced representations and Frobenius reciprocity, central characters and central idempotents, Burnside's p^a q^b theorem, Frobenius normal p-complement theorem.

MATH 8080. Lie Algebras. 3 hours.
Prerequisite: MATH 8000.
Nilpotent and solvable Lie algebras, structure and classification of semisimple Lie algebras, roots, weights, finite-dimensional representations.

MATH 8100. Real Analysis I. 3 hours.
Prerequisite: MATH 4100/6100 or permission of department.
Measure and integration theory with relevant examples from Lebesgue integration, Hilbert spaces (only with regard to L^2), L^p spaces and the related Riesz representation theorem. Hahn, Jordan and Lebesgue decomposition theorems, Radon-Nikodym Theorem and Fubini's Theorem.

MATH 8110. Real Analysis II. 3 hours.
Prerequisite: MATH 8100.
Topics including: Haar Integral, change of variable formula, Hahn-Banach theorem for Hilbert spaces, Banach spaces and Fourier theory (series, transform, Gelfand-Fourier homomorphism).

MATH 8130. Topics in Analysis. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: MATH 8100 or MATH 8150.
Topics in analysis at the level of current research.

MATH 8150. Complex Variables I. 3 hours.
The Cauchy-Riemann Equations, linear fractional transformations and elementary conformal mappings, Cauchy's theorems and its consequences, including Morera's theorem, Taylor and Laurent expansions, maximum principle, residue theorem, argument principle, Rouche's theorem and Liouville's theorem.

MATH 8160. Complex Variables II. 3 hours.
Prerequisite: MATH 8150.
Topics including Riemann Mapping Theorem, elliptic functions, Mittag-Leffler and Weierstrass Theorems, analytic continuation and Riemann surfaces.

MATH 8170. Functional Analysis I. 3 hours.
Prerequisite: MATH 8100.
Hilbert spaces and Banach spaces, spectral theory, topological vector spaces, comvexity and its consequences, including the Krein-Milman theorem.

MATH 8180. Functional Analysis II. 3 hours.
Prerequisite: MATH 8170 or permission of department.
Operator theory, spectral theorem for normal operators, distribution theory, the Schwartz spaces, topics from C*-algebras and von Neumann algebras.

MATH 8190. Lie Groups. 3 hours.
Prerequisite: MATH 8000 and MATH 8250.
Classical groups, exponential map, Poincare-Birkhoff-Witt Theorem, homogeneous spaces, adjoint representation, covering groups, compact groups, Peter-Weyl Theorem, Weyl character formula.

MATH 8200. Algebraic Topology. 3 hours.
Prerequisite: MATH 4200/6200.
The fundamental group, van Kampen's theorem, and covering spaces. Introduction to homology: simplicial, singular, and cellular. Applications.

MATH 8210. Topology of Manifolds. 3 hours.
Prerequisite: MATH 8200.
Poincare duality, deRham's theorem, topics from differential topology.

MATH 8220. Homotopy Theory. 3 hours.
Prerequisite: MATH 8200.
Topics in homotopy theory, including homotopy groups, CW complexes, and fibrations.

MATH 8230. Topics in Topology and Geometry. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: MATH 8200 or permission of department.
Advanced topics in topology and/or differential geometry leading to and including research level material.

MATH 8250. Differential Geometry I. 3 hours.
Prerequisite: MATH 4200/6200.
Differentiable manifolds, vector bundles, tensors, flows, and Frobenius' theorem. Introduction to Riemannian geometry.

MATH 8260. Differential Geometry II. 3 hours.
Prerequisite: MATH 8250.
Riemannian geometry: connections, curvature, first and second variation; geometry of submanifolds. Gauss-Bonnet theorem. Additional topics, such as

characteristic classes, complex manifolds, integral geometry.

MATH 8300. Introduction to Algebraic Geometry. 3 hours.
Prerequisite: MATH 8000.
An invitation to algebraic through a study of examples. Affine and projective varieties, regular and rational maps, Nullstellensatz. Veronese and Segre varieties, Grassmannians, algebraic groups, quadrics. Smoothness and tangent spaces, singularities and tangent cones.

MATH 8310. Geometry of Schemes. 3 hours.
Prerequisite: MATH 8020 and MATH 8300.
The language of Grothendieck's theory of schemes. Topics include the spectrum of a ring, "gluing" spectra to form schemes, products, quasi-coherent sheaves of ideals, and the functor of points.

MATH 8320. Algebraic Curves. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: MATH 8300.
The theory of curves, including linear series and the Riemann Roch theorem. Either the algebraic (variety), arithmetic (function field), or analytic (Riemann surface) aspect of the subject may be emphasized in different years.

MATH 8330. Topics in Algebraic Geometry. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: MATH 8300.
Advanced topics such as algebraic surfaces, or cohomology and sheaves.

MATH 8400. Algebraic/Analytic Number Theory I. 3 hours.
Prerequisite: MATH 4080/6080 or permission of department.
The core material of algebraic number theory: number fields, rings of integers, discriminants, ideal class groups, Dirichlet's unit theorem, splitting of primes; p-adic fields, Hensel's lemma, adeles and ideles, the strong approximation theorem.

MATH 8410. Algebraic/Analytic Number Theory II. 3 hours.
Prerequisite: MATH 8400 or permission of department.
A continuation of Algebraic and Analytic Number Theory I, introducing analytic methods: the Riemann Zeta function, its analytic continuation and functional equation, the Prime number theorem; sieves, the Bombieri-Vinogradov theorem, the Chebotarev density theorem.

MATH 8430. Topics in Arithmetic Geometry. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Topics in Algebraic number theory and Arithmetic geometry, such as class field theory, Iwasawa theory, elliptic curves, complex multiplication, cohomology theories, Arakelov theory, diophantine geometry, automorphic forms, L-functions, representation theory.

MATH 8440. Topics in Combinatorial/Analytic Number Theory. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Topics in combinatorial and analytic number theory, such as sieve methods, probabilistic models of prime numbers, the distribution of arithmetic functions, the circle method, additive number theory, transcendence methods.

MATH 8450. Topics in Algorithmic Number Theory. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Topics in computational number theory and algebraic geometry, such as factoring and primality testing, cryptography and coding theory, algorithms in number theory and arithmetic geometry.

MATH 8500. Advanced Numerical Analysis I. 3 hours.
Prerequisite: MATH 4510/6510.
Prerequisite or corequisite: MATH 4100/6100.
Numerical solution of nonlinear equations in one and several variables, numerical methods for constrained and unconstrained optimization, numerical solution of linear systems, numerical methods for computing eigenvalues and eigenvectors, numerical solution of linear least squares problems, computer applications for applied problems.

MATH 8510. Advanced Numerical Analysis II. 3 hours.
Prerequisite: MATH 8500.
Polynomial and spline interpolation and approximation theory, numerical integration methods, numerical solution of ordinary differential equations, computer applications for applied problems.

MATH 8520. Advanced Numerical Analysis III. 3 hours.
Prerequisite: MATH 8500.
Finite difference and finite element methods for elliptic, parabolic, and hyperbolic partial differential equations, convergence and stability of those methods, numerical algorithms for the implementation of those methods.

MATH 8550. Special Topics in Numerical Analysis. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: MATH 8500.
Special topics in numerical analysis, including iterative methods for large linear systems, computer aided geometric design, multivariate splines, numerical solutions for pde's, numerical quadrature and cubature, numerical optimization, wavelet analysis for numerical imaging. In any semester, one of the above topics will be covered.

MATH 8600. Probability. 3 hours.
Prerequisite: MATH 8100.
Probability spaces, random variables, distributions, expectation and higher moments, conditional probability and expectation, convergence of sequences and series of random variables, strong and weak laws of large numbers, characteristic functions, infinitely divisible distributions, weak convergence of measures, central limit theorems.

MATH 8620. Stochastic Processes. 3 hours.
Prerequisite: MATH 8100.
Conditional expectation, Markov processes, martingales and convergence theorems, stationary processes, introduction to stochastic integration.

MATH 8630. Stochastic Analysis. 3 hours.
Prerequisite: MATH 8100.
Conditional expectation, Brownian motion, semimartingales, stochastic calculus, stochastic differential equations, stochastic control, stochastic filtering.

MATH 8700. Applied Mathematics: Applications in Industry. 3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: MATH 4720/6720.
Mathematical modeling of some real-world industrial problems. Topics will be selected from a list which includes air quality modeling, crystal precipitation, electron beam lithography, image processing, photographic film development, production planning in manufacturing, and optimal control of chemical reactions.

MATH 8710. Applied Mathematics: Variational Methods/Perturbation Theory. 3 hours.
Prerequisite: MATH 4100/6100.
Calculus of variations, Euler-Lagrange equations, Hamilton's principle, approximate methods, eigenvalue problems, asymptotic expansions, method of steepest descent, method of stationary phase, perturbation of eigenvalues, nonlinear eigenvalue problems, oscillations and periodic solutions, Hopf bifurcation, singular perturbation theory, applications.

MATH 8740. Ordinary Differential Equations. 3 hours.
Prerequisite: MATH 4100/6100.
Solutions of initial value problems: existence, uniqueness, and dependence on parameters, differential inequalities, maximal and minimal solutions, continuation of solutions, linear systems, self-adjoint eigenvalue problems, Floquet Theory.

MATH 8750. Introduction to Dynamical Systems. 3 hours.
Prerequisite: MATH 8740.
Continuous dynamical systems, trajectories, periodic orbits, invariant sets, structure of alpha and omega limit sets, applications to two-dimensional autonomous systems of ODE's, Poincare-Bendixson Theorem, discrete dynamical systems, infinite dimensional spaces, semi-dynamical systems, functional differential equations.

MATH 8770. Partial Differential Equations. 3 hours.
Prerequisite: MATH 4100/6100.
Classification of second order linear partial differential equations, modern treatment of characteristics, function spaces, Sobolev spaces, Fourier transform of generalized functions, generalized and classical solutions, initial and boundary value problems, eigenvalue problems.

MATH 8800. Directed Reading and/or Projects. 1-6 hours. Repeatable for maximum 30 hours credit.
Directed reading and/or project at the doctoral level.

MATH 8900. Seminar in Algebra. 1-3 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
A study of some phase of current research in algebra.

MATH 8910. Seminar in Analysis. 1-3 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
A study of some phase of current research in analysis.

MATH 8920. Seminar in Topology. 1-3 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
A study of some phase of current research in topology.

MATH 8930. Seminar in Algebraic Geometry. 1-3 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
A study of some phase of current research in algebraic geometry.

MATH 8940. Seminar in Number Theory. 1-3 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.

A study of some phase of current research in number theory.

MATH 8950. Seminar in Numerical Analysis. 1-3 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
A study of some phase of current research in numerical analysis.

MATH 8960. Seminar in Probability. 1-3 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
A study of some phase of current research in probability.

MATH 8970. Seminar in Applied Mathematics. 1-3 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
A study of some phase of current research in applied mathematics.

MATH 8980. Seminar in Geometry. 1-3 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
A study of some phase of current research in geometry.

MATH 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

MATH 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 40 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Microbiology

Duncan C. Krause, *Head*
Anne O. Summers, *Graduate Coordinator,*
542-2045
(Biological Sciences Building)

Programs of study leading to both MS and PhD degrees are offered in different fields of microbiology including microbial genetics, microbial ecology, microbial pathogenesis, cell biology, microbial physiology, anaerobic microbiology, and biotechnology. The department occupies over 34,000 square feet of space, with laboratories equipped for electrophoretic analyses, gas-liquid chromatography, high-performance liquid chromatography, tissue culture, radioisotopic studies, light spectroscopy, fluorimetry, cell fractionation, ultracentrifugation, fermentation and computerized molecular sequence/structure analyses. In addition, on-campus facilities available to faculty and students include an electron microscopy center, a large-scale fermentation laboratory, a cell analysis facility for flow cytometry, and a molecular genetics instrumentation laboratory offering automated protein and DNA sequencing, amino acid analysis, oligonucleotide synthesis and peptide synthesis services. The Georgia Marine Institute on Sapelo Island, the Skidaway Institute of Oceanography, and the Savannah River Ecology Laboratory are available for environmental studies in connection with faculty from this department.

Prospective students should have credit for courses in calculus or statistics, genetics, biochemistry, and a year each of inorganic and organic chemistry, with labs. A score of at least 50 on the Test of Spoken English (TSE) is required of all foreign applicants whose native language is not English. The TOEFL may not be substituted.

Prospective students should address inquiries to the Graduate Coordinator, Department of Microbiology. Graduate students are only admitted at the beginning of fall semester. Consideration of candidates for financial assistance begins as early as the preceding January 1 and is generally concluded by mid-April. Financial assistance begins with the fall semester. In addition to several attractive fellowships, assistantships are available for teaching and research. The 12-month stipend is $18,000, although truly outstanding students will be considered for the prestigious Presidential Graduate Fellowship. All students supported by fellowships or assistantships receive a waiver of tuition, but must pay an activity fee and health insurance.

Faculty members are associated with a variety of interdepartmental programs including the Center for Metalloenzyme Studies, the Center for Tropical and Emerging Global Diseases, the Center for Biological Resource Recovery, and the Biomedical Health Sciences Institute among others. Graduate courses offered through these centers as well as through many other departments are available to complement the course offerings in microbiology. Course listings in biochemistry and molecular biology, chemistry, cellular biology, ecology, genetics, marine sciences, and medical microbiology should be consulted for the range of courses available to microbiology graduate students. Additional information is also available at our website: http://www.uga.edu/mib.

MIBO 4010/6010. Critical Review of Research in Microbiology. 2 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Undergraduate corequisite: MIBO 4900L or MIBO 4960H or MIBO 4970H or MIBO 4980H or MIBO 4990H.
Critical analysis and discussion of recent advances in microbiology research through oral presentation. Specific topics may vary but will emphasize molecular biology, physiology, and ecology of prokaryotes.

(MIBO)FDST 4030/6030-4030L/6030L. Food Microbiology. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: MIBO 3000-3000L or MIBO 3500.
Interactions of microorganisms with food and the implications of these interactions for food preservation, safety, and fermentations. Pathogenic microorganisms associated with food. Analysis of foods for the presence of microorganisms.

MIBO 4090/6090. Prokaryotic Biology. 3 hours.
Undergraduate prerequisite: MIBO 3500.
Undergraduate prerequisite or corequisite: GENE (BIOL) 3200.
Ultrastructure, physiology, genetics, ecology, and phylogeny of bacteria and archaea.

(MIBO)CBIO 4100/6100. Immunology. 3 hours.
Undergraduate prerequisite: [BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010 or BCMB 4020/6020] and GENE(BIOL) 3200.
Immunology from an experimental perspective. Anatomy, development, and function of the immune system. Immune system in infectious diseases. Mechanisms and pathogenesis of immunological disorders. Evolution of immunological concepts.

(MIBO)FDST 4120/6120-4120L/6120L. Food Fermentations. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: MIBO 3000-3000L or MIBO 3500.
Microbial and technical aspects of dairy, vegetable, meat, grain, and fruit fermentations. Products studied include cheese, sausage, beer, wine, and soy sauce.

MIBO 4220/6220. Pathogenic Bacteriology. 3 hours.
Undergraduate prerequisite: MIBO 3500.
Molecular basis of bacterial virulence: identification of virulence factors, genetic regulation of virulence, and the complex interactions between bacterial pathogens and their hosts.

MIBO 4300/6300. Environmental Microbiology and Biotechnology. 3 hours.
Undergraduate prerequisite: MIBO 3500.
Microorganisms used in biotechnology, agriculture, bioremediation, and industry; distribution, taxonomy, and physiology of environmentally significant microorganisms.

(MIBO)EHSC(FDST) 4310/6310-4310L/6310L. Environmental Microbiology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MIBO 3500.
Types of microorganisms in the environment; effect of environmental conditions on microbial existence; public health aspects of environmental microbiology; applications of microorganisms to solve environmental problems.

(MIBO)(EHSC)FDST 4320/6320-4320L/6320L. Microbiology of Food Sanitation. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: MIBO 3000-3000L or MIBO 3500.
Microorganisms and practices important in food industry sanitation and safety; microorganisms involved and control measures taken to prevent food borne illness, with emphasis on food process operations.

MIBO 4500/6500. Bacterial Symbioses. 3 hours.
Undergraduate prerequisite: MIBO 3500 or MIBO 3000-3000L.
Undergraduate prerequisite or corequisite: GENE (BIOL) 3200.
Bacterial interactions with plants and animals, particularly mutualistic associations. Emphasis on insights yielded by modern molecular, genetic, and genomic experimental approaches.

MIBO 4600L/6600L. Experimental Microbiology Laboratory. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: (MIBO 3500 and MIBO 3510L) or permission of department.
Analysis of bacteria with emphasis on genetics, metabolism, pathogenesis, and diversity.

(MIBO)CRSS 4610/6610-4610L/6610L. Soil Microbiology. 3 hours. 1 hour lecture and 4 hours lab per week.
Microorganisms in soil and their effect on nutrient recycling, especially as it relates to environmental quality and crop production.

(MIBO)MARS 4620/6620-4620L/6620L. Microbial Ecology. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: MIBO 3500 or permission of department.
Emphasizes the roles of microorganisms in ecosystems. Nutrient cycles, methods of microbial analysis, and the functional roles of microorganisms.

MIBO 4700/6700. Medical Mycology. 3 hours.
Undergraduate prerequisite or corequisite: MIBO 3500.
Graduate prerequisite or corequisite: Permission of department.
The yeasts, molds, and actinomycetes most likely to be encountered by a medical mycologist in a diagnostic laboratory, with special emphasis on the organisms which are pathogenic for man and other animals.

MIBO 4710L/6710L. Medical Mycology Laboratory. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: MIBO 3500 and MIBO 3510L.
Prerequisite or corequisite: MIBO 4700/6700.
Molecular and microscopic methods used to study selected fungal organisms that are pathogenic to humans.

(MIBO)ENTO 6670-6670L. Insect Pathogens. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Insect pathology, including history, classification of diseases, insect response to pathogens, normal insect/microbe ecology, and the production and use of insect pathogens for pest control.

MIBO 7000. Master's Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

MIBO 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

MIBO 7500. Introductory Microbiology for Teachers. 3 hours.
Not open to students with credit in MIBO 3500.
Prerequisite: BIOL 1108-1108L and CHEM 2211 and CHEM 2211L and BCMB(BIOL)(CHEM) 3100.
Microorganisms, with special emphasis on bacteria, their structure, function, diversity, and importance to man. Specifically for students who plan to teach in some area of microbiology.

MIBO 7510L. Introductory Microbiology Laboratory for Teachers. 3 hours. 1 hour lecture and 4 hours lab per week.
Not open to students with credit in MIBO 3510L.
Prerequisite: BIOL 1108-1108L and CHEM 2211 and CHEM 2211L.
Prerequisite or corequisite: MIBO 7500 and BCMB(BIOL)(CHEM) 3100.
The primary scientific reasoning and laboratory methodology used in microbiology with an emphasis for students who plan to teach in some area of microbiology.

MIBO 8110L. Electronic Exploration of Prokaryotic Biology. 3 hours. 2 hours lecture and 2 hours lab per week.
Use of internet resources to investigate aspects of regulation, structure, and metabolism in prokaryotic cells.

MIBO 8150. Seminar in Diversity of Microbial Research. 1 hour. Repeatable for maximum 3 hours credit. 1 hour lecture and 1 hour lab per week.
Physiology, ecology, phylogeny, and genetics of various bacterial groups, including studies on adaption to high or low temperatures, methanogens, human and plant pathogens, bioremediation, mercury metabolism, nitrogen fixation, heme biosynthesis, protein folding, gene expression, and cell-cell interactions. Emphasis will be placed on methods used to research these problems.

MIBO 8160. Seminar in Microbiology. 3 hours.
Prerequisite: MIBO 8610.
Techniques involved in effective seminar presentation, including preparation of visual aids, logical development of topic, and delivery. Students present a practice session to the class on an advanced microbiology topic which is videotaped and critiqued, as well as a formal seminar to the department.

MIBO 8170. Seminar in Prokaryotic Diversity. 2 hours. Repeatable for maximum 6 hours credit.
Research literature on the diversity of bacteria and archaea, including physiology, genetics, ecology, and taxonomy.

(MIBO)MMIB 8200. Pathogenic and Molecular Microbiology. 5 hours.
Prerequisite: MMIB 4220/6220 and BCMB 4020/6020.
Medical pathogens emphasizing molecular techniques.

(MIBO)MMIB 8230. Special Topics in Microbial Pathogenesis. 2 hours. Repeatable for maximum 4 hours credit.
Presentation and discussion of published research and new developments in microbial pathogenesis.

(MIBO)(BCMB)CBIO 8520. Topics in Biochemistry and Molecular Genetics of Parasites. 3 hours. Repeatable for maximum 6 hours credit. 1 hour lecture and 2 hours lab per week.
Prerequisite: BCMB 8020 and GENE 8930.
Prerequisite or corequisite: CBIO 8010 or BCMB (CHEM) 8200 or GENE 8930.
Molecular genetics, cell biology, and biochemistry of parasites. Systems of unique significance to parasites will be emphasized.

MIBO 8600. Fundamental Processes of Prokaryotic Cell Biology. 3 hours.
Biosynthesis of metabolic building blocks (amino acids, nucleotides, fatty acids) and macromolecules (DNA, RNA, proteins, and cell surface structures), environmental regulation, and coordination of these processes with transport and cell division as they occur in key model prokaryotes.

MIBO 8610. Prokaryotic Physiology and Diversity. 3 hours.
Physiological aspects of prokaryotic diversity. Principles of bioenergetics; fermentation pathways, including TCA cycle, glycolysis, substrate level phosphorylation, and ion pumps; aerobic and anaerobic respiration; photosynthesis, autotrophy; and aerobic and anaerobic xenobiotic degradation.

MIBO 8700. Special Topics in Microbiology. 2 hours. Repeatable for maximum 8 hours credit.
Microbial ecology, diversity, physiology, molecular genetics, biochemistry, or pathogenesis. Specific topic depends on instructor.

MIBO 8900. Research Techniques in Microbiology. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research techniques in microbiology for graduate students in preparation for their thesis/dissertation projects.

MIBO 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

MIBO 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Music

Donald R. Lowe, *Director and Graduate Coordinator,* 542-2743
(Music Building)

The Master of Music degree is offered in composition, music literature, or performance. Students concentrating in musicology should enroll for the Master of Arts degree. Students desiring fifth-year certification as teachers of music in the public schools should enroll for the Master of Music Education degree offered in cooperation with the College of Education. The MMEd degree also offers a concentration in music therapy for students wishing to qualify as registered music therapists.

Students desiring sixth-year certification as teachers of music in the public schools should enroll for the Specialist in Education program (sixth-year program) offered in cooperation with the College of Education. The Doctor of Education degree with subject matter concentration in music is offered in cooperation with the College of Education.

The Doctor of Musical Arts degree is offered in performance, composition, conducting, or music education.

The Doctor of Philosophy degree is offered in music to provide students with opportunities to pursue the research and academic aspects of the discipline at the highest scholarly level.

Some music education courses are listed as EMUS courses in the College of Education section of this bulletin.

MUSI 4100/6100. Tonal Theory and Analysis. 2 hours.
Undergraduate prerequisite: (MUSI 2120 and MUSI 2130) or MUSI 4050.
Chromatic harmonic analysis and analytical methods.

MUSI 4110/6110. Introduction to Counterpoint. 3 hours.
Undergraduate prerequisite: (MUSI 2120 and MUSI 2130) or MUSI 4050.

Analysis and composition using sixteenth and eighteenth-century compositional techniques.

MUSI 4120/6120. Form and Analysis. 3 hours.
Undergraduate prerequisite: (MUSI 2120 and MUSI 2130) or MUSI 4050.
Analysis of form focusing on music from the seventeenth, eighteenth, and nineteenth centuries.

MUSI 4130/6130. Electronic Music Composition I. 3 hours.
Undergraduate prerequisite: (MUSI 2120 and MUSI 2130) or MUSI 4050.
Electronic music techniques, focusing on classical and MIDI applications.

MUSI 4140/6140. Eighteenth-Century Counterpoint. 3 hours.
Undergraduate prerequisite: MUSI 4110/6110.
Eighteenth-century counterpoint focusing on invention, canon, and fugue in the works of J.S. Bach.

MUSI 4200/6200. Ancient, Medieval, and Renaissance Music. 3 hours.
Undergraduate prerequisite: MUSI 3210 and MUSI 3220.
Music from Greek and Roman society to ca. 1600.

MUSI 4210/6210. Music in the Baroque Period. 3 hours.
Undergraduate prerequisite: MUSI 3210 and MUSI 3220.
Musical styles and forms from Monteverdi through Bach and Handel.

MUSI 4220/6220. Music in the Classic Period. 3 hours.
Undergraduate prerequisite: MUSI 3210 and MUSI 3220.
Chamber, orchestral, keyboard, and operatic works from the middle and late eighteenth century.

MUSI 4230/6230. Music in the Romantic Period. 3 hours.
Undergraduate prerequisite: MUSI 3210 and MUSI 3220.
Emphasis on the development of song, symphony, chamber music, and opera.

MUSI 4240/6240. Modern Music. 3 hours.
Undergraduate prerequisite: MUSI 3210 and MUSI 3220.
Modern trends in music from Schoenberg, Stravinsky, Hindemith, and Bartok to the present.

MUSI 4250/6250. Women and Music. 3 hours.
Undergraduate prerequisite: (MUSI 3210 and MUSI 3220) or permission of department.
Roles of women in music, including the history of women musicians in western art music, world cultures, and popular music; gender studies in music.

MUSI 4260/6260. Opera Literature. 2 hours.
Undergraduate prerequisite: MUSI 3210 and MUSI 3220.
Representative operas from the Baroque era to the twentieth century.

MUSI 4270/6270. Topics in Musical Cultures of the World. 3 hours.
Undergraduate prerequisite: MUSI 3020 or MUSI 3021 or permission of school.
In-depth study of the music of a select culture, area, topic, or genre. Investigates historical aspects, social functions, aesthetic preferences, the musician, musical instruments, structures and forms, performance contexts, and practices.

MUSI 4280/6280. Instrumental/Vocal/Choral Literature. 2 hours.
Undergraduate prerequisite: (MUSI 3210 and MUSI 3220) or permission of department.
Solo, sonata, and ensemble music composed for winds, brass, strings, piano and harpsichord, organ or voice, dating from the earliest appropriate period to the present.

MUSI 4730/6730. African American Choral Ensemble. 1 hour. Repeatable for maximum 4 hours credit.
Performance of traditional and contemporary black gospel, spiritual, and popular music.

MUSI 4740/6740. University Symphony Orchestra. 1 hour. Repeatable for maximum 8 hours credit.
Undergraduate prerequisite: Permission of department.
Performance of orchestral literature of various styles and genres.

MUSI 4750/6750. University Chorus. 1 hour. Repeatable for maximum 8 hours credit.
Performance of choral literature for mixed voices from all periods of music history, including sacred, secular, folk, and popular music.

MUSI 4760/6760. Concert Choir. 1 hour. Repeatable for maximum 8 hours credit.
Undergraduate prerequisite: Permission of department.
Performance of choral literature for mixed voices from all periods of music history, including sacred, secular, folk, and popular music.

MUSI 4780/6780. Jazz Bands. 1 hour. Repeatable for maximum 8 hours credit.
Performance of works in a variety of jazz idioms and styles with emphasis on big band jazz.

MUSI 4781/6781. Jazz Band I. 1 hour.
Prerequisite: Permission of major.
Performance of works in a variety of jazz idiom and styles with emphasis on big band jazz. Topics and compositions will include a full historical range from the early blues charts of W. C. Handy (St. Louis Blues, et al.), through the music of Earl "Fatha" Hines and Bix Beiderbecke (1920ís), to the big band jazz of the 1930ís through 1960ís (Benny Goodman and his colleagues through late Woody Herman and Count Basie).

MUSI 4784/6784. Jazz Improvisational I. 1 hour.
Undergraduate prerequisite: Permission of major.
Introduction to jazz theory with in-depth study of chords/scale relationships based on modal harmony. Practicing the basic modes in etudes and utilizing those modes in improvisational exercises. Study of performance and compositional styles of Miles Davis (Miles Smiles) and Joe Henderson (Page One). Study of modal repertoire, including "Footprints," "Blue Bossa," and "So What."

MUSI 4785/6785. Jazz Band II. 1 hour.
Prerequisite: Permission of major.
Jazz and the Afro-Cuban influence; Eddie Harris and "free jazz".Study of jazz theory with in-depth analysis of Afro-Cuban influences, quartal harmony, and so-called free jazz styles. Study of compositional styles of Dizzy Gillespie (Dizzyís Diamonds), Eddie Harris (Mean Greens), John Coltrane (Meditations), and Ornette Coleman (Free Jazz). Study of repertoire, including "A Night in Tunisia," "Manteca," "Freedom Jazz Dance," and "Mean Greens."

MUSI 4786/6786. Jazz Improvisation II. 1 hour.
Prerequisite: MUSI 4784/6784.
Prerequisite or corequisite: Permission of major.
Introduction to the 12-bar blues form and introduction to "Rhythm Changes" and the language of Be-bop. Study of performance and compositional styles of Louis Armstrong (Best of the Decca Years), Donald Byrd (Royal Flush), Miles Davis (Kind of Blue), and Hank Mobley (Soul Station). Study of repertoire, including "Freddie Freeloader," "All Blues," "Watermelon Man," and "Back Oí Town Blues." Study of rhythmic relationships in performance and compositional styles of Lester Young (Lester Leaps In), Charlie Parker (Anthropology), Duke Ellington (Cottontail), Horace Silver (The Best of Blue Note), and Art Blakely and the Jazz Messengers (At the Café Bohemia).

MUSI 4788/6788. Jazz Private Applied. 1 hour.
Undergraduate prerequisite: Permission of major.
Continuation of the 32-bar song form (begun with "I Got Rhythm"). Study of jazz theory with in-depth analysis of chord/scale relationships based around standard period compositions of Duke Ellington, Cole Porter, Harold Arlen, George Gershwin, Thelonious Monk, and others. Study of performance and compositional styles of Clark Terry (Memories of Duke), Joe Pass (Ira, George and Joe), Duke Ellington (In a Mellow Tone), and Thelonious Monk (Round Midnight). Study of repertoire, including "A Foggy Day," "I Love You," "I Let a Song go Out of My Heart," and "Well You Neednít."

MUSI 4790/6790. Chamber Music Ensemble. 1 hour. Repeatable for maximum 8 hours credit.
Undergraduate prerequisite: Permission of department.
Chamber music experiences in variable instrumental categories (percussion, clarinet, trombone, etc.)

MUSI 4792L/6792L. Jazz Improvisation. 1-2 hours. Repeatable for maximum 6 hours credit. 1-2 hours lab per week.
Undergraduate prerequisite: MUSI 1120 and MUSI 1130.
Graduate prerequisite: Permission of department.
Undergraduate prerequisite or corequisite: Permission of department.
The study and performance of jazz improvisation styles from the 1930's to the present through listening, analysis, practical application (applied study), and performance.

MUSI 4800/6800. Contemporary Chamber Ensemble. 1 hour. Repeatable for maximum 8 hours credit.
Undergraduate prerequisite: Permission of department.
Performance of modern literature for small and large ensembles.

MUSI 4830/6830. Collegium Musicum. 1 hour. Repeatable for maximum 8 hours credit.
Undergraduate prerequisite: Permission of department.
Performance of early music through the Baroque.

MUSI 4840/6840. Symphonic Wind Ensemble. 1 hour. Repeatable for maximum 8 hours credit.
Undergraduate prerequisite: Permission of department.
Performance of wind chamber compositions with concentration on advanced scores.

MUSI 4850/6850. Opera Ensemble. 1 hour. Repeatable for maximum 4 hours credit.
Undergraduate prerequisite: Permission of department.
Performance of operatic literature.

MUSI 5106/7106. Jazz Combos. 1 hour. Repeatable for maximum 4 hours credit. 2 hours lab per week.
Prerequisite: Permission of department.
Performance of works in a variety of jazz idioms and styles with emphasis on small group jazz.

MUSI 5110/7110. Music for Childhood. 3 hours.
Undergraduate prerequisite: MUSI 3110 and MUSI 3120.
Literature, techniques, and methodologies for teaching children music in a diverse society; a study of children's musical development.

MUSI 5120/7120. Teaching Music for Early Childhood Teachers. 3 hours.
Undergraduate prerequisite: MUSI 3050.
Music teaching techniques, methods, and materials for the early childhood teacher. For education majors only.

MUSI 5130/7130. Early Childhood Musical Development. 3 hours.
Undergraduate prerequisite: MUSI 3110 and MUSI 3120.
Musical development of children from birth through age eight years emphasizing auditory perception, auditory discrimination, responses of children to music, modes of learning music, and children's acquisition of musical performance skills, and understandings.

MUSI 5140/7140. Computer-Assisted Instruction in Music. 2 hours.
Undergraduate prerequisite: MUSI 2120 and MUSI 2130.
Programming and testing CAI music lessons.

MUSI 5260/7260. Marching Band Techniques. 2 hours.
Methods and techniques for organizing and training marching bands; planning music, drills, formations, and shows.

MUSI 5270/7270. Advanced Conducting. 2 hours.
Undergraduate prerequisite: MUSI 3490 or MUSI 3500 or MUSI 3510.
Choral and instrumental conducting methods and techniques with application in laboratory situations.

MUSI 5280/7280. Instrumental Techniques. 1 hour.
Repeatable for maximum 4 hours credit.
Performance techniques and teaching methods for wind, string, and percussion instruments.

MUSI 5290/7290. Jazz Piano Improvisation Class. 2 hours.
Skills and techniques in keyboard jazz playing based upon a knowledge of modern popular harmonic and notational practices.

MUSI 5340/7340. Choral Literature and Performance Practice. 2 hours.
Undergraduate corequisite: MUSI 3130.
Choral music, including multicultural materials, suitable for all levels and voices.

MUSI 5350/7350. Instrumental Literature and Performance Practice. 2 hours.
Undergraduate corequisite: MUSI 3150.
Instrumental music, including multicultural materials, suitable for all levels of instruction for band, orchestra, and chamber music.

MUSI 5400/7400. Principles of Music Therapy. 3 hours.
Music as human behavior and its uses as therapeutic intervention with various populations.

MUSI 5410/7410. Psychology of Music. 3 hours.
Undergraduate prerequisite: MUSI 5400/7400.
Acoustical and psychological aspects of music with emphasis upon problems of perception, experimental aesthetics, musical function, measurement and diagnosis of musical ability.

MUSI 5420/7420. Influence of Music on Behavior. 3 hours.
Undergraduate prerequisite: MUSI 5410/7410.
Physiological effects of music, the relation of music to health, and the place of music in the habilitative and rehabilitative process.

MUSI 5430/7430. Clinical Experience. 2 hours.
Undergraduate prerequisite: MUSI 5400/7400 or MUSI 5420/7420 or MUSI 5440/7440.
Practical application of music therapy in an assigned clinic, along with seminars to analyze effectiveness, in-depth interactions, intervention strategies, and accountability measures.

MUSI 5440/7440. Music in Recreation. 2 hours.
Undergraduate prerequisite: MUSI 2120 or MUSI 2130 or MUSI 2530 or MUSI 3480.
Methods of song leading and accompanying on the autoharp, guitar, and piano.

MUSI 5450/7450. Music for Exceptional Children. 3 hours.
Undergraduate prerequisite: Junior standing and permission of department.
Trends in special education, characteristics and needs of those classified as exceptional, curriculum development, and intervention strategies. Mainstreamed and self-contained settings will be discussed.

MUSI 5730/7730. Electronic Music Composition II. 3 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: MUSI 4130/6130.
Electronic music compositional techniques, focusing on digital sound recording, sampling, and editing. Students will use highly advanced recording and editing software on a high-speed computer.

MUSI 6000. Directed Independent Study. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Independent research topics directed by a faculty member at the masters level.

MUSI 6010. Trends and Issues in Music Education. 3 hours.
Prerequisite: Permission of department.
Current trends and issues in music education, the historical and social foundations of American music education, music education bibliography, and the role of research in music education.

MUSI 6290. Music History Problems. 3 hours.
Western music literature, styles, genres, and composers from the Medieval period to the present day.

MUSI 6300. Music Bibliography. 3 hours.
Library research, documentation, and writing.

MUSI 7000. Master's Research. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

MUSI 7030. Research in Music Education. 3 hours.
Basic concepts, types, and techniques of research as they apply to music education. Students plan and conduct individual research projects.

MUSI 7300. Master's Thesis. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

MUSI 7320. Problems in Instrumental Music Education. 3 hours.
Prerequisite: MUSI 3120 and MUSI 3150.
Methods and techniques used for development of the instrumental music program, elementary through secondary school; diagnosis of problems relating to strings, woodwinds, brasses, and percussion.

MUSI 7330. Music Curriculum and Supervision. 3 hours.
Prerequisite: Permission of department.
Philosophy, design, implementation, and supervision of curriculum for music programs in the public schools.

MUSI 7500. Vocal Pedagogy. 2 hours.
Vocal pedagogy in performance and in music education.

MUSI 7520. Piano Pedagogy I. 2 hours.
Learning theories, methodologies, and materials.

MUSI 7530. Piano Pedagogy II. 2 hours.
Prerequisite: MUSI 7520 or permission of department.
Repertoire, motivation, and related issues of personalities/learning styles.

MUSI 7810. Applied Music Instruction. 1-3 hours.
Repeatable for maximum 42 hours credit.
Prerequisite: Permission of department.
Applied lessons at the masters level.

MUSI 7910. Masters Recital. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Solo or chamber recital in partial fulfillment of requirements for masters degrees.
Non-traditional format: Recital.

MUSI 7920. Conducting Project. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Preparation and presentation of masters conducting recital.

MUSI 8000. Practicum in Music. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Supervised professional work experience with an educational institution, musical organization, or arts agency.

MUSI 8010. Directed Independent Study. 1-3 hours.
Repeatable for maximum 24 hours credit.
Prerequisite: Permission of department.
Independent research topics directed by a faculty member at the doctoral level.

MUSI 8030. Research in Music Education. 3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: MUSI 7030 or permission of department.
Students plan and conduct group and individual projects.

MUSI 8040. Score Analysis I. 3 hours.
Prerequisite: Permission of department.
Score preparation and study with emphasis on the conductor's point of view. Literature will be chosen from Medieval through Baroque periods.

MUSI 8050. Score Analysis II. 3 hours.
Prerequisite: MUSI 8040 or permission of department.
Score preparation and study with emphasis on the conductor's point of view. Literature will be chosen from the Classic period to the present.

MUSI 8060. Music in Higher Education. 2 hours.
History and development of music in higher education in the United States and the mission, function, and operation of music units within a college or university setting.

MUSI 8070. Music Education Problems. 3 hours.
Repeatable for maximum 9 hours credit.
Prerequisite: MUSI 7330 or permission of department.
Basic principles and current thought in music education.

MUSI 8080. Pedagogy of Music. 3 hours.
Principles and practices of music instruction, including learning theory, curriculum design, and systems of evaluation.

MUSI 8090. Psychology of Music. 3 hours.
Experimental findings and research methods in psychology of music.

MUSI 8100. History of Music Theory. 3 hours.
Prerequisite: MUSI 4050.
Issues in music theory from Pythagorus to the present, with emphasis on Medieval and Renaissance theorists.

MUSI 8110. Contemporary Trends in Music Theory I. 3 hours.
Prerequisite: MUSI 4050.
Chromatic tonal theory and analysis. Late and post-romantic composers (Wagner, Mahler, Strauss, and Schoenberg) involving current applications of typical harmonic and Schenkerian graphic analysis.

MUSI 8120. Contemporary Trends in Music Theory II. 3 hours.
Prerequisite: MUSI 4050.
Analytical methods and models for modern and contemporary music. The primary foci for the course will be pitch-class set analysis, twelve-tone theory, and more recent theories.

MUSI 8130. Special Topics in Music Theory. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: MUSI 4050.
Changing series of topics, including pedagogy of music theory.

MUSI 8300. Special Studies in Keyboard Literature. 2 hours. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Keyboard music of selected composers, single genres, or specific national schools.

MUSI 8310. Special Topics in Musicology. 3 hours.
Repeatable for maximum 12 hours credit.
Changing topics, such as individual composers, music notation, and special research areas.

MUSI 8320. Chamber Music Literature. 3 hours.
Major chamber music works from the Italian trio sonata to the present day.

MUSI 8330. Performance Practice. 3 hours.
Performance practice in a variety of style periods involving treatises, scores, and recordings.

MUSI 8340. American Music. 3 hours.
Art music and vernacular traditions of the United States.

MUSI 8350. Musicology Proseminar. 3 hours. Repeatable for maximum 9 hours credit.
Research seminar in musicology; topics based upon current trends in musicological research.

MUSI 8810. Applied Music Instruction. 1-3 hours.
Repeatable for maximum 27 hours credit.
Prerequisite: Permission of department.
Applied music instruction at the doctoral level.

MUSI 8910. Doctoral Recital. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Solo, chamber, or lecture recital in partial fulfillment of requirements for the doctoral degree.

MUSI 8920. Doctoral Conducting Project. 1-3 hours. Repeatable for maximum 12 hours credit.
Preparation and presentation of doctoral conducting recital.

MUSI 8990. Doctoral Seminar. 1 hour. Repeatable for maximum 6 hours credit.
Seminar on a variety of topics of interest to music doctoral students.

MUSI 9000. Doctoral Research. 1-10 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

MUSI 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 33 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Philosophy

Robert G. Burton, *Head*
Charles B. Cross, *Graduate Coordinator,*
542-2653
(Peabody Hall)

The department offers a comprehensive program, covering the major areas of philosophical study, leading to the MA and the PhD degrees. Various approaches, including historical studies, linguistic analysis, logical analysis, and phenomenology are represented by the faculty. Though the department allows students to pursue their own interests in diverse areas, our special strengths lie in metaphysics, moral and political philosophy, and theory of knowledge and philosophy of mind. The graduate program is designed to give broad and thorough training in these basic areas of philosophy, as well as the opportunity for special study in the area of specialization of interest to the student. Admission to the PhD program presupposes a thorough background in the history of philosophy. Restricted admission encourages close student-faculty relationships. Preparation for teaching is considered an integral part of the PhD program.

For the MA degree, reading knowledge of one foreign language is required; for the PhD, one foreign language is required and a second language and/or knowledge of areas cognate to philosophy may be required.

Additional information about the department can be found on our website: http://www.phil.uga.edu.

PHIL 4000/6000. Plato. 3 hours.
Undergraduate prerequisite: PHIL 3000 or permission of department.
The major writings of Plato.

PHIL 4010/6010. Aristotle. 3 hours.
Undergraduate prerequisite: PHIL 3000 or permission of department.
The major writings of Aristotle.

PHIL 4020/6020. Medieval Philosophy. 3 hours.
Undergraduate prerequisite: PHIL 3000 or permission of department.
The major figures of the medieval period in western philosophy, including Augustine and Aquinas.

PHIL 4030/6030. Continental Rationalism. 3 hours.
Undergraduate prerequisite: PHIL 3010 or permission of department.
Continental Rationalism, focusing on evaluating the principal writings of Descartes, Spinoza, and Leibniz.

PHIL 4040/6040. British Empiricism. 3 hours.
Undergraduate prerequisite: PHIL 3010 or permission of department.
British Empiricism, focusing on evaluating the principal writings of Locke, Berkeley, and Hume.

PHIL 4050/6050. Kant. 3 hours.
Undergraduate prerequisite: PHIL 3010 or PHIL 3020 or permission of department.
The major writings of Immanuel Kant.

PHIL 4060/6060. Hegel. 3 hours.
Undergraduate prerequisite: PHIL 3010 or PHIL 3020 or permission of department.
The major writings of G.W.F. Hegel.

PHIL 4070/6070. Nineteenth-Century European Philosophy. 3 hours.
Undergraduate prerequisite: PHIL 3010 or PHIL 3020 or permission of department.
Works of some major nineteenth-century philosophers, typically organized around a theme. Philosophers to be studied may include Mill, Bentham, Frege, Brentano, Schopenhauer, Fichte, Schelling, and Nietzsche.

PHIL 4080/6080. Classical American Philosophy. 3 hours.
Undergraduate prerequisite: Any 3000-level PHIL course or permission of department.
The major writings of C.S. Pierce, William James, and John Dewey and their influence on the development of contemporary philosophy.

PHIL 4090/6090. Contemporary Continental Tradition. 3 hours.
Undergraduate prerequisite: Any 3000-level PHIL course or permission of department.
Writings from the early phenomenologists, existentialists, contemporary Marxists and their successors, such as Husserl, Heidegger, Merleau-Ponty, Camus, Sartre, Marcuse, and Habermas.

PHIL 4100/6100. Contemporary Analytic Tradition. 3 hours.
Undergraduate prerequisite: (PHIL 2500 and any 3000-level PHIL course) or permission of department.
The development of contemporary analytical philosophy from the turn of the century to the present. Readings will be from philosophers such as Russell, Moore, Wittgenstein, Carnap, Ryle, Austin, Quine, and Strawson.

PHIL 4210/6210. Social and Political Philosophy. 3 hours.
Undergraduate prerequisite: PHIL 2200 or any 3000-level PHIL course or permission of department.
The nature and function of society and the state, human freedom and rights, and the bases of social and political obligations.

PHIL(EETH) 4220/6220. Environmental Ethics. 3 hours.
Undergraduate prerequisite: PHIL 2200 or any 3000-level PHIL course or permission of department.
Major professional and nonprofessional writings in the field of environmental ethics.

PHIL 4230/6230. Aesthetics. 3 hours.
Undergraduate prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400 or any 3000-level PHIL course or permission of department.
Philosophical theories about the arts; for example, painting, literature, and music. Questions to be addressed include: what makes art art? and what are appropriate criteria of good art? Attention may also be given to such topics as the function of art in society.

PHIL 4240/6240. Philosophy of Law. 3 hours.
Undergraduate prerequisite: PHIL 2200 or any 3000-level PHIL course or permission of department.
The nature and function of law, with emphasis on the interpretation and application of the law in the judicial process. Readings in classical and contemporary schools of the philosophy of law.

PHIL(EETH) 4250/6250. Technology and Values. 3 hours.
Undergraduate prerequisite: Any 3000-level PHIL course or permission of department.
Technology in its broadest human context, with emphasis on the mutual influence between means and ends and the impact of technology on shaping the beliefs and attitudes of a civilization. Includes alternative assessments of technology and illustrates with specific crucial issues of our time.

PHIL(LING) 4300/6300. Philosophy of Language. 3 hours.
Undergraduate prerequisite: (PHIL 2500 and any 3000-level PHIL course) or permission of department.
Topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism, and the uses of language.

PHIL 4310/6310. Philosophy of Mind. 3 hours.
Undergraduate prerequisite: Any 3000-level PHIL course or EPSY(PSYC)(ARTI) 3020 or permission of department.
The philosophical implications of alternative approaches to psychology such as the behavioral, the psychoanalytic, the phenomenological, with particular attention to such problematic areas as the nature and validation of psychological concepts, law, and theories, and the knowledge of other minds.

PHIL 4400/6400. History of Natural Science. 3 hours.
Undergraduate prerequisite: PHIL 1000 or PHIL 2400 or any 3000-level PHIL course or permission of department.
Major physical, biological, and cosmological theories and their philosophic import, sixth century B.C. to the present.

PHIL 4410/6410. Philosophy of Natural Science. 3 hours.
Undergraduate prerequisite: PHIL 1000 or PHIL 2400 or any 3000-level PHIL course or permission of department.
The logical structure of scientific hypotheses and/or laws, and the problems of their meaning and confirmation; the general patterns of scientific explanation; and the ideals of prediction and control.

PHIL 4420/6420. Philosophy of Social Science. 3 hours.
Undergraduate prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400 or any 3000-level PHIL course or permission of department.
The methods and problems of inductive reasoning, including the nature of probable inference, techniques of verification, and the structure of scientific explanation, with special reference to the social sciences.

(PHIL)RELI 4500/6500. Philosophy of Religion. 3 hours.
Undergraduate prerequisite: RELI 1003 or PHIL 1000 or PHIL 2200 or PHIL 2400.
The meaning, nature, and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and humanity's relation to God.

PHIL(LING) 4510/6510. Deductive Systems. 3 hours.
Undergraduate prerequisite: PHIL 2500 or permission of department.
Symbolic-mathematical logic, examining the propositional and predicate calculi, with emphasis on problems in translation and formalization and topics in the philosophy of logic and mathematics.

PHIL(LING) 4520/6520. Model Theory. 3 hours.
Prerequisite: PHIL(LING) 4510/6510 or permission of department.
Formal semantics for sentential and first-order predicate logic, including both soundness and completeness results for first-order logic. Additional topics may in-

clude Goedel's incompleteness results, the Skolem-Lowenheim theorem, or possible world semantics for modal logics.

PHIL 4530/6530. Philosophy of Mathematics. 3 hours.
Undergraduate prerequisite: PHIL 2500 or MATH 2200 or permission of department.
The philosophical issues associated with mathematical inquiry, including, perhaps, the existence and nature of mathematical objects, the epistemology of mathematical truths, the character of mathematical proof, and the foundations of mathematics.

(PHIL)CSCI 4550/6550. Artificial Intelligence. 3 hours.
The artificial intelligence approach to modeling cognitive processes. Topics include an introduction to heuristic methods, problem representation and search methods, classic AI techniques, and a review of the controversial issues of the AI paradigm of cognition as computation.

(PHIL)HIST 4860/6860. History, History of Philosophy, Philosophy. 3 hours.
Historians and philosophers differ in the source of evidence and arguments they use and in the standards to which they appeal. Nonetheless, works in each of these fields raise questions relevant to the other field. The purpose of this course is to explore the main relationships between these two fields.

PHIL 7000. Master's Research. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

PHIL 7010. Teaching Philosophy. 1 hour. 2 hours lab per week.
Materials, techniques, and objectives for teaching undergraduate courses in philosophy. Particular attention to presenting lectures, leading discussions, constructing examinations, and instructional evaluations.

PHIL 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

PHIL 8000. Seminar in History of Philosophy, Ancient and Medieval. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Philosophical topics and problems as found in the works of ancient and medieval philosophers.

PHIL 8010. Seminar in History of Philosophy: Modern and Contemporary. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Philosophical topics and problems as found in the works of modern and contemporary philosophy.

PHIL 8200. Seminar in Ethics. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Problems and topics in classical and contemporary moral philosophy.

PHIL 8210. Seminar in Political Philosophy. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Problems and topics in classical and contemporary political philosophy.

PHIL(LING) 8300. Seminar in the Philosophy of Language. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
The original course materials dealing with such topics as formal and ordinary languages, meaning, reference, descriptions, truth, definition, analyticity, speech acts, and the uses of language.

PHIL 8310. Seminar in the Philosophy of Mind. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
One or more central problems in the philosophy of mind such as the mind-body problem, intentionality, and metal causation.

PHIL 8400. Seminar in Philosophy of Science. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Basic concepts in science, such as explanation, description, prediction, law, cause, theory, confirmation, probability, observation, and measurement.

PHIL 8500. Seminar in Problems of Logic. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PHIL(LING) 4510/6510 or permission of department.
Modal logic, epistemic logic, temporal logic, conditional logic, nonmontonic logic, the problem of induction, and the logic of belief revision.

PHIL 8600. Seminar in Metaphysics. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Various metaphysical systems and related problems.

PHIL 8610. Seminar in Epistemology. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Various theories of knowledge and related problems.

PHIL(RELI) 8630. Seminar in Philosophy of Religion. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Major topics in the philosophy of religion, such as the nature and existence of God, the problem of evil, and the character of religious discourse.

(PHIL)CSCI 8650. Logic and Logic Programming. 4 hours.
Prerequisite: [CSCI(ARTI) 4540/6540 and PHIL (LING)4510/6510] or permission of department.
Theoretical foundations of automated reasoning and logic programming. Topics covered include propositional logic, predicate logic, first-order models, resolution principles, logic programming paradigms, nonmonotonic reasoning.

PHIL 8700. Problems and Topics in Philosophy. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Philosophical positions and problems.

PHIL 8800. Readings and Research in Special Problems in Philosophy. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Directed reading and research in philosophy in areas of a student's special interest.

PHIL 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

PHIL 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Physics and Astronomy

Heinz-Bernd Schüttler, *Head*
F. Todd Baker, *Graduate Coordinator,*
542-2883
(Physics Building)

The Department of Physics and Astronomy offers graduate work leading to the MS and PhD degrees in physics. The major research in the department is conducted in the following fields: astrophysics, atomic and molecular physics, nuclear physics, condensed matter physics, statistical mechanics, optics, relativity, high energy physics, and mathematical physics. Experimental research is conducted in on-campus laboratories for atomic and molecular physics, laser spectroscopy of solids, and material synthesis. Research involving the application of computer simulational techniques to astrophysics, condensed matter physics, material science, and high energy physics is conducted at the Center for Simulational Physics. Experimental research in intermediate-energy nuclear physics is performed at off-campus accelerator laboratories in the U.S., France, Canada, and Japan. Astronomical research is conducted with the facilities of the National Radio and Optical Observatories, and those of NASA. Research in the above areas is aided by the campus computing facilities.

Prospective students desiring financial aid should submit all application material by February 15. No foreign language is required for the master's or doctoral degrees.

Physics

PHYS 4000/6000. Physics Seminar. 1 hour. Repeatable for maximum 3 hours credit.
Discussion of contemporary topics in physics.

PHYS 4101/6101. Theoretical Mechanics I. 3 hours.
Prerequisite: MATH 2700 and PHYS 3700.
Kinematics and dynamics of a particle and systems of particles. Topics include the harmonic oscillator, the damped oscillator, the driven oscillator, the central force problem, Kepler's laws, Rutherford scattering, and accelerated reference frames.

PHYS 4102/6102. Theoretical Mechanics II. 3 hours.
Undergraduate prerequisite: PHYS 4101/6101.
Mechanics of continuous media. Formal developments in mechanics including the formulations of Lagrange and Hamilton.

PHYS 4201/6201. Electricity and Magnetism I. 3 hours.
Prerequisite: MATH 2700 and PHYS 3700.
The first semester of a two-semester course on classical electrodynamics. Topics to be covered include a review of vector calculus, electrostatics, magnetostatics, Maxwell's equations, electromagnetic radiation, the

theory of electromagnetic fields in matter, and Einstein's special theory of relativity.

PHYS 4202/6202. Electricity and Magnetism II. 3 hours.
Undergraduate prerequisite: PHYS 4201/6201.
Applications of Maxwell's equations.

PHYS 4300/6300. Thermodynamics and Kinetic Theory. 3 hours.
Undergraduate prerequisite: (PHYS 1112-1112L or PHYS 1212-1212L) and MATH 2700.
The laws of thermodynamics and their application to physical systems. Kinetic theory.

PHYS 4701/6701. Introductory Quantum Mechanics I. 3 hours.
Undergraduate prerequisite: PHYS 3700 and PHYS 4101/6101.
Fundamental principles of quantum mechanics. Solutions of the Schroedinger equation and their properties for simple systems are discussed.

PHYS 4702/6702. Introductory Quantum Mechanics II. 3 hours.
Undergraduate prerequisite: PHYS 4701/6701.
Perturbation theory and applications of quantum mechanics.

PHYS 4750/6750. Nuclear and Particle Physics. 3 hours.
Undergraduate prerequisite: PHYS 3700.
Properties of nuclear and subnuclear systems. Fundamental interactions between particles are treated. An introduction to the theory of the structure of baryons, mesons, and nuclei is presented along with quarks and the standard model.

PHYS 4820/6820. Condensed Matter Physics. 3 hours.
Undergraduate prerequisite: PHYS 3700 and PHYS 4300/6300.
Elastic, thermal, electrical, magnetic and optical properties of condensed matter. Covers such topics as crystal structure, symmetry operators, X-ray and neutron diffraction, lattice vibrations, thermal properties, electrons in metals and semiconductors, dielectric and optical properties, magnetism and magnetic resonance, superconductivity, and quantum fluids.

PHYS 6670L. Experimental Physics. 3 hours. 6 hours lab per week.
Prerequisite: PHYS 4701/6701.
Laboratory course in which the student uses modern experimental techniques to investigate phenomena in atomic, molecular, nuclear, and solid state physics.

(PHYS)ENGR 6921. Engineering Physics Design Project. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: PHYS 6670L.
Fundamentals of engineering design with emphasis toward integrating engineering science and physics knowledge in team projects. Problem selection and application of design principles will be stressed.

PHYS 7000. Master's Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

PHYS 7111-7111L. Introductory Physics for Teachers - Mechanics, Waves, Thermodynamics. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: MATH 1090 or MATH 1113.
This course is designed to aid the introductory physics teacher in dealing with problems in mechanics, waves, and thermodynamics which arise in his/her teaching. The effective presentation of physical concepts in this area will be emphasized. Credit is limited to students working for degrees in education.

PHYS 7112-7112L. Introductory Physics for Teachers - Electricity and Magnetism, Optics, Modern Physics. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: PHYS 7111-7111L.
This course is designed to aid the introductory physics teacher in dealing with problems in electricity and magnetism, optics, and nuclear physics which arise in his/her teaching. The effective presentation of physical concepts in this area will be emphasized. Credit is limited to students working for degrees in education.

PHYS 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

PHYS 8011. Classical Mechanics I. 3 hours.
Prerequisite: PHYS 4102/6102.
Corequisite: PHYS 8401.
The mechanics of particles and rigid bodies is developed using generalized coordinates, D'Alembert's principle and Hamilton's principle. Symmetry principles and conservation laws are emphasized.

PHYS 8012. Classical Mechanics II. 3 hours.
Prerequisite: PHYS 8011.
Corequisite: PHYS 8402.
The mechanics of small oscillations and continuous media is developed using Hamilton's principle. Other topics covered include: special relativity, Hamilton's

equations of motion, canonical transformations, Hamilton-Jacobi Theory and an introduction to nonlinear systems.

PHYS 8101. Quantum Mechanics I. 3 hours.
Prerequisite: PHYS 4702/6702 and PHYS 8012 and PHYS 8402.
The basic principles of quantum mechanics and their applications to problems in modern physics. Topics covered include principles of wave mechanics, central forces and angular momentum, three dimensional bound state problems and scattering theory, spin.

PHYS 8102. Quantum Mechanics II. 3 hours.
Prerequisite: PHYS 8101.
The basic principles of quantum mechanics and their applications to problems in modern physics. Topics covered include quantum dynamics, identical particles, symmetries, time-independent and time-dependent perturbation theory.

PHYS 8150. Advanced Quantum Theory. 3 hours.
Prerequisite: PHYS 8102.
Relativistic quantum mechanics and quantum field theory.

PHYS 8171. Quantum Theory of Scattering with Applications I. 3 hours.
Prerequisite: PHYS 8102.
Concepts and applications of potential scattering. Both short-range and long-range potentials are treated.

PHYS 8172. Quantum Theory of Scattering with Applications II. 3 hours.
Prerequisite: PHYS 8171.
Scattering and reactions involving identical particles and composite systems. Elastic, inelastic, and rearrangement processes are treated.

PHYS 8201. Advanced Electromagnetic Theory I. 3 hours.
Prerequisite: PHYS 4202/6202 and PHYS 8402.
A study of classical electrodynamics. Topics include development of Maxwell's electromagnetic field equations and the Lorentz force equation, electrostatics and magnetostatics.

PHYS 8202. Advanced Electromagnetic Theory II. 3 hours.
Prerequisite: PHYS 8201.
A study of classical electrodynamics. Topics include development of Maxwell's electromagnetic field equations and the Lorentz force equation, electrostatics and magnetostatics, time-varying fields, conservation laws, radiating systems, and electromagnetic waves.

PHYS 8251. Relativity I. 3 hours.
Prerequisite: Permission of department.
Einstein's general theory of relativity. Topics include mathematical background, fundamental field equations of Einstein's theory of gravitation and their phenomenological extension to include electromagnetic phenomena.

PHYS 8252. Relativity II. 3 hours.
Prerequisite: Permission of department.
Einstein's general theory of relativity. Topics include fundamental field equations of Einstein's theory of the total field, particle structure and motion in general relativistic theories, experimental and observational tests of the theories.

PHYS 8301. Statistical Mechanics I. 3 hours.
Prerequisite: PHYS 8102.
The foundation and development of statistical mechanics in classical and quantum physics and its relationship to thermodynamics.

PHYS 8302. Statistical Mechanics II. 3 hours.
Prerequisite: PHYS 8301.
Applications of statistical mechanics to some fundamental problems in physics, astrophysics and other sciences.

PHYS 8321. Advanced Statistical Mechanics I. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PHYS 8302 or permission of department.
Advanced topics in statistical mechanics, especially those which have contributed to recent rapid progress in the modern many-body problem. Analytical and other advanced mathematical techniques will be emphasized.

PHYS 8322. Advanced Statistical Mechanics II. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PHYS 8302 or permission of department.
Recent topics in advanced statistical mechanics of special significance. Special mathematical techniques such as matrix polynomials and diagonalization, transfer matrix method and mapping, chaotic dynamical systems, elliptical integrals will be discussed in detail.

PHYS 8401. Methods of Mathematical Physics I. 3 hours.
Prerequisite: MATH 2700.
Treatment of mathematical methods necessary for solving problems in physics. Techniques from complex analysis, integral transforms, linear vector spaces and ordinary differential equations are covered.

PHYS 8402. Methods of Mathematical Physics II. 3 hours.
Prerequisite: PHYS 8401.
Treatment of mathematical methods necessary for solving problems in physics. Techniques from special functions, partial differential equations, Green's func-

tions and the calculus of variations are developed and applied.

PHYS 8501. Structure and Spectra of Atoms and Molecules I. 3 hours.
Prerequisite: PHYS 8102.
Atomic and molecular physics with emphasis on current research in the structure and spectra of atomic systems, especially non-relativistic descriptions.

PHYS 8502. Structure and Spectra of Atoms and Molecules II. 3 hours.
Prerequisite: PHYS 8501.
Atomic and molecular physics with emphasis on current research in the structure and spectra of molecular systems, and relativistic descriptions of atoms and molecules.

PHYS 8601. Computer Simulation Methods in Physics. 3 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: PHYS 4300/6300 or permission of department.
The use of computer simulation methods to treat otherwise intractable problems. Emphasis will be placed on many-body problems and the techniques will include Monte Carlo and spin dynamics.

PHYS 8602. Computer Simulations of Materials. 3 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: PHYS 8601 or permission of department.
Computer simulation algorithms including molecular dynamics and quantum molecular dynamics techniques. Student must write programs and analyze data for different ensembles.

PHYS 8730. Nuclear Theory. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: PHYS 8102.
Analysis of symmetry principles, nuclear forces, nuclear shell model, nuclear and nucleon structure and nucleonic degrees of freedom.

PHYS 8821. Advanced Solid State Physics I. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: PHYS 8301.
Quantum theory of solids. Current and fundamental topics in solid state physics, including the theory of electrons and phonons in metals, semi-conductors and insulators, will be covered.

PHYS 8822. Advanced Solid State Physics II. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: PHYS 8821.
Quantum theory of solids. Current and fundamental topics in solid state physics, including magnetism, optical and transport properties of solids and superconductivity, will be covered.

PHYS 8900. Advanced Topics. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Current and advanced topics in physics and astronomy.

PHYS 8990. Introduction to Research. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Active research areas in physics and astronomy provided by faculty members who are actively engaged in research.

PHYS 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

PHYS 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Astronomy

ASTR 4010/6010. Astrophysics I. 3 hours.
Undergraduate prerequisite: ASTR 1010 and ASTR 1020 and PHYS 3700 and PHYS 4101/6101.
Stellar astrophysics, stellar structure and atmospheres, formation of spectral lines and spectral classification, stellar evolution from star formation to planetary nebulae and supernovae and the resulting compact objects.

ASTR 4020/6020. Astrophysics II. 3 hours.
Undergraduate prerequisite: ASTR 4010/6010.
Systems of stars, the interstellar medium and stellar populations, galaxies, their classification and evolution, extragalactic astronomy and cosmology.

ASTR 4330/6330. Astronomy Seminar. 1 hour. Repeatable for maximum 4 hours credit.
Undergraduate prerequisite: ASTR 1010 and ASTR 1020.
Undergraduate prerequisite or corequisite: ASTR 3010 or ASTR 3020 or ASTR 4010/6010 or ASTR 4020/6020.
Seminar on contemporary topics in astronomy and astrophysics.

ASTR 8070. Stellar Structure and Evolution. 3 hours.
Prerequisite: MATH 2700 and PHYS 4101/6101 and PHYS 4201/6201 and PHYS 4701/6701.
Prerequisite or corequisite: PHYS 4202/6202 or PHYS 4702/6702.
The internal structure and evolution of single and binary stars from formation to supernova. The equations

of stellar structure and their numerical solution are discussed. Recent developments in stellar evolution theory, including brown dwarfs and extrasolar giant planets are presented.

ASTR 8080. Stellar Atmospheres. 3 hours.
Prerequisite: ASTR 8070.
The atmospheres of stars and giant planets, the equation of state, the transfer of radiation in stellar atmospheres, and the interaction of radiation and matter. The equations of stellar atmospheres and their numerical solution are derived and results of modern calculations are presented. Recent developments in stellar atmosphere theory, including brown dwarfs and extrasolar giant planets.

ASTR 8090. The Interstellar Medium. 3 hours.
Prerequisite: MATH 2700 and PHYS 4101/6101 and PHYS 4202/6202 and PHYS 4702/6702.
Physical processes and phenomena in the interstellar medium including radiative processes; excitation, ionization, and dissociation of atoms and molecules; neutral hydrogen and galactic structure; equilibrium conditions in clouds; interactions of dust with gas and radiation; HII regions; molecular clouds; star formation; planetary nebulae; supernova remnants; cosmic rays and the galactic magnetic field.

ASTR 8110. Graduate Astronomy Seminar. 1 hour.
Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Professional skills such as writing and reviewing research and observing proposals, writing and refereeing research papers, making oral presentations of research and of journal articles, and writing brief newspaper and magazine summaries.

ASTR 8270. Extragalactic Astronomy and Observational Cosmology. 3 hours.
Prerequisite: MATH 2700 and PHYS 4101/6101 and PHYS 4202/6202 and PHYS 4702/6702.
Stellar content and dynamics of external galaxies, galaxy types and their evolution, Active Galactic Nuclei and quasars. Topics to be discussed include the extragalactic distance scale, clusters of galaxies, large-scale structure, cosmological models incorporating the microwave background, the early universe and galaxy formation.

Political Science

Thomas P. Lauth, *Head*
Arnold P. Fleischmann, *Graduate Coordinator, (MA, PhD)*, 542-2994
Jerome S. Legge, Jr., *Graduate Coordinator, (MPA, DPA)*, 542-2932
(Baldwin Hall)

The Department of Political Science offers programs leading to MA, MPA, PhD, and DPA degrees. The MA and PhD programs are oriented to the systematic study and analysis of political phenomena. For the PhD program, candidates are required to complete three courses in research methods and statistics offered within the department. They choose three fields from the seven offered for comprehensive examinations. These include: American politics; public administration; public policy; political theory; comparative politics; international relations; and law, courts, and the judicial process.

The purpose of the Master of Public Administration degree is to educate individuals for administrative and managerial careers in government. It is designed for those planning to enter or who are already a part of the public service. The Doctor of Public Administration program offers a research degree designed for students interested in academic or public service careers. For further information, our e-mail address is polgrad@arches.uga.edu.

POLS 4370/6370. Politics of Industrialized Democracies. 3 hours.
Not open to students with credit in POLS 4370H.
Undergraduate prerequisite: POLS 1101.
The political economy, institutions, and cultures of the major capitalist countries in Europe, East Asia, and North America. State-society relations and formal and informal political institutions, such as political parties, interest groups, electoral systems, and democratic representation.

POLS 4520/6520. Electoral Behavior. 3 hours.
Undergraduate prerequisite: POLS 1101.
Factors which contribute to electoral choice and the dynamics of voting in the American political system.

POLS 4610/6610. The United States Presidency. 3 hours.
Undergraduate prerequisite: POLS 1101.
The president of the United States, including the president's constitutional position, theories of executive dominance and executive privilege, the president's attempt to control the executive branch, and presidential-congressional relations.

POLS 6000. American Political Thought. 3 hours.
Ideas about human nature and government that have shaped political practice and debate in America. The principles of the Declaration of Independence and the Constitution as developed especially by Jefferson, Madison, and Hamilton, and the interpretation of these principles by such statesmen as Lincoln and Wilson. Other topics include Black political thought and current liberal-conservative debate.

POLS 6020. Political Philosophy: Hobbes to the Twentieth Century. 3 hours.
Development of modern political philosophy through the analysis of selected works of such writers as Hobbes, Locke, Hume, Rousseau, Mill, Marx, and Nietzsche.

POLS 6040. Problems in Democratic Theory. 3 hours.
Major problems that arise in theoretical discussions of democracy, such as the nature of democratic government, its purposes, its justification, its limitations, and the conditions necessary for its maintenance.

POLS 6100. Pre-Seminar in American Politics. 3 hours.
The study of American politics. Recommended for students considering advanced work in the field.

POLS 6140. The Legislative Process. 3 hours.
The United States Congress with emphasis on recruitment and composition of leadership, procedures, and the role of parties and interest groups. Recent changes in the Congress will be examined in light of theories of representation.

POLS 6170. American Political Parties. 3 hours.
Research on political parties in the United States, with an emphasis on empirical analysis and theories of parties.

POLS 6200. Pre-Seminar in International Relations. 3 hours.
Realist, idealist, and institutionalist approaches to the study of International Relations. Special emphasis on applications to both historical and contemporary cases.

POLS 6210. International Organization. 3 hours.
The role of international institutions to overcome obstacles of international cooperation. International regimes, formal as well as informal, and their capacity to induce cooperation. International regimes are understood as political institutions designed to solve collective action problems and reduce transaction costs among states to such degrees that international cooperation becomes possible.

POLS 6220. International Law. 3 hours.
Functioning of the legal structures in the international system with special emphasis on the relation between law and politics.

POLS 6230. International Conflict. 3 hours.
Major theories of international conflict. The objective is to explore the logical and empirical foundations for the key hypotheses linking systemic, structural, coalitional, and individual factors to decisions regarding war and peace. Also, introduces the different types of methodologies currently used in the quantitative study of international relations.

POLS 6240. International Political Economy. 3 hours.
Various aspects of the international economy, both theoretical and practical, essential to an understanding of modern diplomacy and the conduct of foreign affairs.

POLS 6250. American Foreign Policy. 3 hours.
History and content of American foreign policy as well as the foreign policy making process. Special emphasis on the role of individuals and nongovernment organizations in making foreign policy in a mature democracy.

POLS 6350. Comparative Analysis and Method. 3 hours.
Comparative approaches to political science. The transition from feudalism to capitalism, state building, and the interaction between political institutions and cultures in various polities. Methods and approaches investigated include structuralism, functionalism, culturalist perspectives, rational choice, institutionalist frameworks, and the perennial issue of what constitutes the "state."

POLS 6380. Russian and East European Politics. 3 hours.
Domestic and international politics in Russia and selected East European states (e.g., Belarus and Ukraine).

POLS 6390. Far Eastern Political Systems. 3 hours.
Social, cultural, and political processes in contrasting Far Eastern nations including China, Japan, and Korea.

Both domestic and international issues will be examined.

POLS 6440. Constitutional Law: Powers. 3 hours.
The substantive law of separation of powers; powers among branches of government and between national and state governments defined; historical coverage is emphasized.

POLS 6460. Constitutional Law: Rights and Liberties. 3 hours.
The substantive constitutional law of rights and liberties, with emphasis on political freedom of speech and press, religious freedom, freedom from discrimination, and protection of due process in criminal justice.

POLS 6490. Administrative Law. 3 hours.
The legal principles and practical doctrines involved in the work of administrative agencies, vested with quasi-legislative or quasi-judicial powers.

POLS 6910. Public Administration and Democracy. 3 hours.
Administrative organization, relations, and controls facing the contemporary public management in the United States. The institutional, political, and normative environment of the public manager in democratic society. Among the questions considered is the problem of reconciling bureaucratic government and democratic principles.

POLS 6920. Public Personnel Administration. 3 hours.
Procedures and problems of governmental personnel administration. Included in the topics are classification, performance appraisal, hiring practices, affirmative action, and pay equity. Studies of governmental agencies are employed to give the students first-hand knowledge of governmental personnel administration.

POLS 6930. Public Financial Administration. 3 hours.
Activities involved in the collection, custody and expenditure of public revenue, such as the assessment and collection of taxes, public borrowing and debt administration, the preparation and enactment of the budget, financial accountability and the audit. In addition, the course covers politics of the budgetary process.

POLS 6960. Organizational Theory. 3 hours.
Major concepts and theories associated with the modern public organization. Organizational environments, goals and effectiveness, strategy and decision-making, structure and design, communication, leadership, individual work behaviors, and other topics. The implications of the public sector context and political environments for these topics.

POLS 6980. Law, Ethics, and Professionalism in Public Administration. 1 hour.
An exposition of three elements of public administration: the legal environment, the subject of ethics, and a consideration of the extent to which public administration can be considered a profession.

POLS 6990. Communication Skills for Public Managers. 1 hour.
The importance of interpersonal and group skills in public sector management. Students will use the public sector assessment center to assess their communication skills, both oral and written.

POLS 7000. Master's Research. 1-6 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

POLS 7010. Research Design. 3 hours.
Basic scientific methods, broadly defined, to include problems of definition, concept formation, hypothesis testing, explanation and prediction, and theory construction.

POLS 7030. Methodology in Political Science. 3 hours.
The use of quantitative methods in political science research. Topics range from descriptive statistics through regression analysis.

POLS 7040. Quantitative Methods. 3 hours.
Prerequisite: POLS 7010 and POLS 7030.
Multiple regression analysis and related techniques. Focus on assumptions of OLS and applications to political science research. Topics include interactives, specifications, nonlinearities, error diagnostics, and introduction to time series and causal modeling.

POLS 7050. Advanced Methods. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: POLS 7040.
Multivariate analysis. Topics include simultaneous equation models, equations with limited dependent variables (Logit, Probit, Scobit, and Tobit), Scaling, Robust Regression and Time Series.

POLS 7060. Writing for Publication in Political Science. 3 hours. Repeatable for maximum 6 hours credit.
Preparation and revision of manuscripts suitable for publication in political science journals.

POLS 7110. Research Methods in Public Administration. 3 hours.
Basic research methods and their use in public administration from the standpoint of both public policy and public management. Topics covered include the scien-

tific method, experimental and quasi-experimental designs, sampling, interviewing, and questionnaire construction.

POLS 7120. Data Applications in Public Administration. 3 hours.
Applications of data analysis techniques to problems in public management and program evaluation. Special attention is devoted to familiarity with computer hardware and software to solve public sector problems. Topics include cross-tabulation, difference of means testing, and regression analysis.

POLS 7300. Master's Thesis. 3-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

POLS 7350. Internship in Government. 3-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Integrates government employment experience into the curriculum of the Master of Public Administration degree program.

POLS 7380. Ethics in Public Administration. 3 hours.
Leading ethical issues that arise in public administration practice and consideration of the sources to which the public administrator can look for guidance in dealing with these issues.

POLS 7500. Local Government Management. 3 hours.
Description and analysis of the practice of local government management. Key issues in several functional areas of local government service are highlighted.

POLS 7520. Urban Policy. 3 hours.
Major federal, state, and local policies affecting American urban areas. Major topics include local government finance, service delivery, land use, and urban economic development.

POLS 7540. Productivity Improvement in Local Government. 3 hours.
The concept of productivity, its importance in the public sector, principal techniques used to improve productivity in local government, and barriers to productivity improvement initiatives.

POLS 7560. Special Topics in Urban Administration. 3 hours. Repeatable for maximum 6 hours credit.
Topics in the area of urban policy and administration. The focus of the course will shift depending on the interest of the instructor and may include such topics as land use policy and regulation, urban service delivery, and local government reform.

POLS 7620. Policy Analysis. 3 hours.
Theoretical approaches and concepts associated with the empirical analysis of public policies.

POLS 7630. Policy Implementation. 3 hours.
Public policy implementation literature with emphasis given to the major substantive and methodological issues driving this emerging field of public policy analysis. Bureaucracy's role in policy process, implementation analysis, and theories and methods for studying policy implementation.

POLS 7640. Program Evaluation. 3 hours.
The theoretical perspectives associated with program evaluation; design and measurement procedures; types of evaluative research; and the management of political and ethical problems associated with performing and utilizing evaluation research.

POLS 7650. Public Policy Seminar. 3 hours.
Research seminar on the major analytical techniques and theoretical approaches to decision-making in substantive public policy areas (e.g., environmental protection, health care, natural resources.)

POLS 7660. Government and Business. 3 hours.
Economic, social, and political bases for government intervention in market economies, comparative and/or American. Evolution of and justification for regulatory policies, the theoretical debate surrounding government regulations, case studies of specific regulatory programs, and alternatives to regulation.

POLS 7720. Public Personnel Problems in Public Agencies. 3 hours.
Selected problems in public personnel administration, using case studies and other vehicles to simulate realistic situations encountered in public agencies. Developing analytical and behavioral skills applicable in public personnel administration.

POLS 7830. Public Financial Management. 3 hours.
Principal aspects of public financial management, including accounting, budgeting, capital budgeting, revenue forecasting, risk management, pension management, and auditing. The focus of the course is on state and local finance.

POLS 7840. Budget Practicum. 3 hours.
The development of practical budgeting skills, with a special emphasis on budget development at the local level of government. Practical computer-based exercises enable the student to learn the logic of budget format and techniques of budget analysis.

POLS 7900. Managing Volunteers in the Public and Nonprofit Sectors. 3 hours.
Involvement of volunteers in government and nonprofit organizations, especially in relation to delivering services and maintaining the organization. Covers size, scope, significance, and challenges of the voluntary sector, and functions of volunteer administration, including recruitment, screening, placement, recognition, and evaluation.

POLS 7930. Human Services Administration in Government. 3 hours.
Special problems and processes involved in administering government and human service programs in health, welfare, disability, social security, and other service areas. Privatization of services will be considered as an alternative service-delivery mechanism.

POLS 7960. Organizational Behavior. 3 hours.
Prerequisite: POLS 6960.
Focuses on four arenas or levels of management which must be integrated in the pursuit of public-sector excellence. These arenas involve individuals, pairs of individuals, supervisor/subordinates, and small groups. Institutional, behavioral, and psychological factors will be emphasized.

POLS 8000. Strategy in Politics. 3 hours.
Formal analysis of strategic behavior in various political settings. Factors leading to competition and cooperation. Course content includes social choice theory, game theory, and other forms of rational choice analysis.

POLS 8020. Formal Analysis. 3 hours.
Game theoretic analysis of politics. The role of information and uncertainty about preferences and beliefs.

POLS 8040. Political Economy. 3 hours.
Various ways of analyzing the interaction between government and the economy.

POLS 8050. Empirical Political Theory. 3 hours.
Principal empirically oriented models and theories used in political science.

POLS 8060. Systems of Political Philosophy. 3 hours. Repeatable for maximum 6 hours credit.
Writings of a leading political philosopher, aimed at seeing how the elements of his/her thought form a comprehensive and unified view of political life. Philosophers to be studied will include Plato, Aristotle, St. Thomas Aquinas, Machiavelli, Hobbes, Locke, Rousseau, Hegel, Marx and Nietzsche. Classic works in American thought, such as the Federalist, will also be considered.

POLS 8080. Problems in Political Philosophy. 3 hours.
Selected problems in political philosophy, including the nature of justice; the functions of government; the ground of legitimate authority; the scope of individual rights; the foundations of democratic government; political obligation, civil disobedience, and revolution; the meaning of responsibility; and views of human nature and their political relevance.

POLS 8090. Recent Political Thought. 3 hours.
Important and influential recent political theories, including ideologies and scientific theories as well as contributions to political philosophy. The aim will be to understand both the approaches to political theory that have emerged in the contemporary period and the alternative interpretations that have been given of contemporary individuals and society.

POLS 8110. Research on Electoral Behavior. 3 hours.
Factors which contribute to electoral choice and the dynamics of voting in the American political system.

POLS 8120. Southern Politics. 3 hours.
The politics of individual states, the emergence of the Republican Party, Black mobilization, the consequences of reapportionment, and selected civil rights topics.

POLS 8130. Government and Interest Groups. 3 hours.
Theories of interest group formation and maintenance. Lobbying and the role of interest groups in the United States governmental process, including traditional literature on pluralism and interest groups as well as modern literature addressing traditional questions and problems.

POLS 8140. The Legislative Process. 3 hours.
The United States Congress, with emphasis on recruitment and composition of leadership, procedures, and the role of parties and interest groups. Recent changes in the Congress will be examined in light of theories of representation.

POLS 8150. The United States Presidency. 3 hours.
Powers of the United States Presidency. The President's constitutional position, including theories of executive dominance and executive privilege. Attention will also be given to the President's attempts to control the executive branch, presidential-congressional relations, and the president's leadership over domestic and foreign policy.

POLS 8160. Urban Politics. 3 hours.
Local politics in the United States, including the social and economic development of cities, local government

structures and their effects, the participation of individuals and groups in urban politics, and major theoretical perspectives in urban research.

POLS 8170. American Political Parties. 3 hours.
Research on political parties in the United States, with an emphasis on empirical analysis and theories of parties.

POLS 8180. Readings and Research in American Government. 3 hours. Repeatable for maximum 9 hours credit.
Independent study of selected topics and problems in American government.

POLS 8190. Campaign Politics. 3 hours.
Presidential selection processes, including impact of rules, money, media, and voting in primaries. Focus on campaign dynamics and strategy.

POLS 8200. Special Topics in International Relations. 3 hours. Repeatable for maximum 6 hours credit.
The substance and method of selected topics in comparative politics with an emphasis on theory, analysis, and praxis. Topics selected by the instructor vary from semester to semester.

POLS 8260. Human Rights Policy. 3 hours.
Human rights issue as it affects the process of policy formulation and implementation, including both domestic and international policy areas.

POLS 8270. Politics of Trade and Security Policy. 3 hours.
Domestic and international politics of trade and security of selected countries, including the United States.

POLS 8300. Selected Topics in Comparative Politics. 3 hours. Repeatable for maximum 6 hours credit.
Research oriented seminar of both the substance and method of selected topics in comparative politics, with an emphasis on theory, analysis, and praxis. Topics selected by the instructor vary from semester to semester.

POLS 8310. Politics of Industrialized Democracies. 3 hours. Repeatable for maximum 6 hours credit.
Political economy and institutions of the major capitalist countries in Europe, East Asia, and North America. Comparative analysis of both country-specific and function-specific criteria, such as state-society relations and formal and informal political institutions.

POLS 8330. Politics of Post-Communist Political Systems. 3 hours.
Domestic and international politics of selected post-communist states.

POLS 8340. Seminar in Developing Political Systems. 3 hours.
Theory of creating integrated, viable, modernizing political systems in a world of economic inequalities. The focus is on the kinds of political institutions that can help manage the social stress of racial, ethnic, cultural, social, economic, technological, and ideological diversity.

POLS 8410. Modern Legal Theory. 3 hours.
Theoretical approaches to analyzing the role of courts in a democracy, including methods for interpreting and applying constitutional and other legal texts.

POLS 8430. Judicial Politics. 3 hours.
Judicial processes, policy-making, and policies, with emphasis on judicial selection, models of judicial decision-making, institutional constraints on judicial choice, and the implementation and impact of judicial decisions.

POLS 8450. Special Topics in Law, Courts, and Judicial Process. 3 hours.
Special topics relating to law, courts, and the judicial process (such as "Women and the Law," "State Legal Systems," "Comparative Legal Systems," "Research Seminar on Trial Courts," etc.).

POLS 8710. Problems in Public Administration. 3 hours.
Perennial and emerging research issues, perspectives, and controversies in the field of public administration.

POLS 8720. Seminar in Selected Problems in Public Personnel Administration. 3 hours. Repeatable for maximum 9 hours credit.
Special topics, such as public sector labor relations and collective bargaining; issues related to job analysis, evaluation, and compensation; or civil service reform.

POLS 8730. Doctoral Research Seminar in Public Administration. 3 hours.
Prerequisite: Permission of department.
The seminar focuses on current research frontiers in the field of public administration. Sessions are organized around research papers, presentations, and focused discussion. Seminar discussions explore methodological and theoretical approaches to key questions in the field.

POLS 8830. Seminar in Public Budgeting. 3 hours.
A doctoral seminar which considers the works of the major scholars in the field of public budgeting and finance.

POLS 8840. Metropolitan Fiscal Problems. 3 hours.
Public economy of metropolitan areas and selected special metropolitan fiscal problems in the areas of

public expenditures, revenues, and fiscal administration.

POLS 8850. Quantitative Analysis for Public Decision-Making. 3 hours.
Quantitative analysis and techniques used in public sector decision-making.

POLS 8940. Seminar in Comparative Administration. 3 hours.
Administrative systems other than the United States. Among the topics covered will be personnel administration, public finance, organizational analysis, and public policy problems. Possible nations covered include Europe, Africa, Asia, and Latin American political and administrative systems.

POLS 8960. Organization Development and Change. 3 hours.
Intellectual and theoretical perspectives on a complex area of inquiry and application—organizational development and change. The course illustrates various ways in which significant theoretical issues can be approached in practical ways, and in which central practical issues can be approached in theoretically-rich ways.

POLS 9000. Doctoral Research. 3-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

POLS 9200. Special Problems in Political Science. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research in specialized areas of Political Science. For students with advanced graduate standing. Students must have completed a minimum of four courses in the general area of the specialized topic.

POLS 9300. Doctoral Dissertation. 3-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Psychology

Garnett S. Stokes, *Head*
Irwin S. Bernstein, *Graduate Coordinator,*
542-3103
(Psychology Building)

Graduate work leading to the PhD degree is offered in biopsychology, clinical psychology, cognitive/experimental psychology, applied psychology, social psychology, and life-span developmental psychology. Students are admitted directly into one of the six doctoral programs, and they are ordinarily required to obtain the master's degree on the way to the doctoral degree. Foreign language proficiency is not required by the department.

The biopsychology program permits specialization in physiological psychology or animal behavior or a combination of the two. The clinical program is a scientist practitioner model program accredited by the American Psychological Association. It seeks to prepare the student for a variety of professional roles by providing a solid foundation in technique, theory and research in clinical psychology. In the cognitive/experimental program, specialization is offered in sensation and perception, cognitive processes, and cognitive neuroscience. The applied psychology program permits the student to concentrate in human factors psychology, industrial-organizational psychology, psychometrics, and related areas. In the social program, substantive training is provided in the areas of social-cognitive and attitudinal theories, group structure and process, and personality and social development, along with methodological training in group observation, attitude measurement, and survey research. The life-span developmental program provides training in areas of early infancy to late adulthood; in such substantive areas as cognitive development and assessment, health psychology, language development, perceptual development, personality/social development, infant attention and development, adaptation and successful aging, developmental theory, and primate development.

Specialized facilities for graduate training/research in psychology include: the Psychology Clinic, which provides diagnostic and therapeutic services; the University Testing and Evaluation Center; a child development subject pool, and infant and child research laboratories both within the department and at the McPhaul Children's Center; the Institute for Behavioral Research; the Gerontology Center; laboratories for human psychophysiological and electroencephalographic studies, as well as a variety of laboratories within the realm of cognitive/experimental psychology; animal laboratories for behavioral and neuroscience research; and a colony of nonhuman primates for behavioral studies.

Students are expected to begin graduate work in the fall semester following their admission. The department does not require applications for financial aid; any student considered eligible by the department will be notified if additional information is required.

(PSYC)AFAM 4500/6500. Psychology of Prejudice. 3 hours.
Undergraduate prerequisite: (PSYC 1101 or SOCI 1101) and senior standing.
Motivational, cognitive, social, and cultural factors that lead to discrimination in our society and various perspectives found in the research on discrimination.

(PSYC)AFAM 4550/6550. Classic Studies in Black Psychology. 3 hours.
Undergraduate prerequisite: AFAM(PSYC) 3150 or permission of department.
Studies which have had major social or scientific impact on the lives of Black Americans and the way black people have been viewed within psychology. Approach is historical and interdisciplinary.

PSYC 4600/6600. Psychology of Women. 3 hours.
Undergraduate prerequisite: PSYC 1101.
Women as the subject of psychological inquiry. Topics include personality theory, psychopathology, psychological aspects of reproductive health, psychological reaction to being victimized, and life crises.

PSYC 4700/6700. Psychology of Aging. 3 hours.
Research in gerontology, with emphasis on learning, personality, attitudes, perception, ability, and adjustment in the aged.

PSYC 4930/6930. Systems of Psychology. 3 hours.
Undergraduate prerequisite: Permission of department.
Major theoretical systems in psychology, with special emphasis on developments of the last half-century, especially behaviorism and cognitivism.

(PSYC)GRNT 5266/7266. Death, Dying, and Bereavement. 3 hours.
Undergraduate prerequisite: Permission of department.
Multi- and inter-disciplinary approaches are used to explore death, dying, and bereavement from a variety of biopsychosocial perspectives.

PSYC 5750/7750. Principles of Primate Phylogeny. 3 hours.
Undergraduate prerequisite: Junior or senior standing.
Interrelationships among morphology, behavior, and systematics for students studying primate behavior.

PSYC 5760/7760. Comparative Physical and Psychological Development of the Primates. 3 hours.
Undergraduate prerequisite: Junior or senior standing.
Influence of species and developmental environment on normal and abnormal behavioral development.

PSYC 5770/7770. Organization of Primate Social Groups. 3 hours.
Undergraduate prerequisite: Junior or senior standing.
The interaction of ecology, phylogeny, individual behavior, and group organization from a comparative perspective.

PSYC 5780/7780. Animal Cognition. 3 hours.
Undergraduate prerequisite: PSYC 4110.
Graduate prerequisite: Permission of department.
An examination of psychological mechanisms in animals that subserve such cognitive processes as perception, attention, working and reference memory, associative learning, spatial navigation, time perception, counting, concept learning, and primate cognition.

PSYC 6100. Cognitive Psychology. 3 hours.
Not open to students with credit in PSYC 6630.
Prerequisite: PSYC 6520 and permission of department.
History of cognitive psychology and the basic cognitive processes involved in attention, memory, knowledge representation, information processing, and problem solving.

PSYC 6110. Basic Learning Processes. 3 hours.
Not open to students with credit in PSYC 6520.
Prerequisite: Permission of department.
Empirical phenomena and theories concerning basic forms of nonassociative and associative learning, primarily stimulus-stimulus and response-consequence associations. Phenomena include habituation, Pavlovian and operant conditioning, generalization and discrimination, concept formation, and choice behavior. Historical and comparative aspects of the subject are emphasized.

PSYC 6130. Biological Foundations of Behavior. 3 hours.
Not open to students with credit in PSYC 6910.
Prerequisite: Permission of department.
Literature in the fundamental aspects of physiological psychology.

PSYC 6160. Sensory Psychology. 3 hours.
Not open to students with credit in PSYC 6920.
Prerequisite: Permission of department.
Literature in the fundamental aspects of sensation and perception.

PSYC 6180. History of Psychology. 3 hours.
Not open to students with credit in PSYC 6040.
Prerequisite: Permission of department.
History of psychology and its antecedents, both classical and modern.

PSYC 6200. Advanced Social Psychology. 3 hours.
Not open to students with credit in PSYC 6640.
Prerequisite: Permission of department.
Ethics in social research, social factors in perception, attitude formation and change, cognitive theories, group structure and process, ideology and personality, and social motivation.

PSYC 6210. Individual Differences. 3 hours.
Not open to students with credit in PSYC 6530.
Prerequisite: Permission of department.
Nature and interrelationship of psychological traits, including maximum performance (intelligence, achievement, etc.) and typical behavior (interests, personality, etc.) traits. Also considered are the extent of racial, sex, age, and other group differences as well as the causal factors (genetics, environmental, etc.) in individual differences.

PSYC 6220. Developmental Psychology. 3 hours.
Not open to students with credit in PSYC 8800.
Prerequisite: Permission of department.
Critical survey of evidence concerning physical, social, and psychological development of primates. Special emphasis is placed on comparative analysis for understanding human development.

PSYC 6240. Advanced Psychopathology: Adults. 3 hours.
Not open to students with credit in PSYC 8140.
Prerequisite: PSYC 3230 and permission of department.
Surveys, historical trends, and contemporary theories of psychopathology; reviews methods, issues, validity, and utility of classificatory systems; evaluates the intrinsic-attribute properties of various behavior disorders as well as related assessment; and treatment procedures.

PSYC 6250. Psychometrics. 3 hours.
Not open to students with credit in PSYC 6150.
Prerequisite: Permission of department.
Theoretical and statistical principles that underlie psychological measurement and how they are employed in the development and use of psychological tests.

PSYC 6310. Introduction to Industrial Psychology. 3 hours.
Not open to students with credit in PSYC 6140.
Major topics in industrial psychology, with emphasis on personnel psychology applied to business, industry, and government.

PSYC 6320. Introduction to Organizational Psychology. 3 hours.
Not open to students with credit in PSYC 8970.
Major topics in organizational psychology with emphasis on organizational psychology applied to business, industry, and government.

PSYC 6400. Research Methods in Social Psychology. 3 hours.
Methods used in contemporary empirical research by social psychologists. Field and experimental approaches will be examined in terms of their relative strengths, weaknesses, and costs for various research questions. Topics will vary from semester to semester.

PSYC 6410. Statistics in Psychological Research. 3 hours.
Prerequisite: Permission of department.
Basic concepts and techniques in descriptive and sampling statistics. Applications of statistics in psychological research.

PSYC 6420. Advanced Experimental Psychology. 3 hours.
Prerequisite: Permission of department.
Experimental techniques and methods of experimental work. Especially designed for the student who desires to learn scientific method in psychology.

PSYC 6430. Applied Regression Methods in Psychology. 3 hours.
Prerequisite: STAT 6220 and permission of department.
Simple and multiple regression methods as applied to the prediction and explanation of behavior. Topics include the formation and testing of models in experimental and nonexperimental research. Computer software packages are used for data analysis.

PSYC 6440. Experimental Design in Psychology. 3 hours.
Prerequisite: STAT 6220 and permission of department.
Design and analysis of psychological research, with emphasis on the logical foundations of experimental design.

PSYC 6510. Theories of Personality. 3 hours.
Prerequisite: Permission of department.
Major theories of personality, with some attention given to current research and to methodological issues in the field.

PSYC 6560. Clinical Assessment. 3 hours.
Introduction to the theory, concepts, methods, and issues related to assessment in the practice of clinical psychology. Provides a foundation for further study of assessment through advanced courses, practice, and self-directed learning.

PSYC 6650. Ethical Issues in the Methods and Practice in Clinical Psychology. 3 hours.
Prerequisite: Permission of department.
Ethics in conducting clinical research and in the assessment and behavior-personality change procedures currently used in clinical psychology. Ethical, applied, and theoretical issues important to these applied procedures.

PSYC 6670. Research Design in Clinical Psychology. 3 hours.
Prerequisite: PSYC 6650.
Research problems and strategies in clinical psychology. Methods for evaluating treatment outcome will be the focus of study. Both single subject and group designs.

PSYC 6800. Physiological Psychology. 3 hours.
The relationship between the internal environment and such behaviors as food intake control, mating behavior, neural action, emotion, etc,.

PSYC 6810. Comparative Psychology. 3 hours.
Prerequisite: Permission of department.
Literature in fundamental aspects of comparative psychology.

PSYC 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

PSYC 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

PSYC 7520. Behavior Therapy. 3 hours.
Not open to students with credit in PSYC 6120.
Behavior therapy techniques for use with adults. Emphasis on relaxation training, systematic desensitization, modeling, contingency management, aversive control, cognitive restructuring, and similar methods.

PSYC 7530. Personality Assessment. 3 hours.
Prerequisite: PSYC 8140 or permission of department.
Clinical application of selected assessment tools, with emphasis on MMPI, TAT, and Rorschach, including theoretical assumptions and interpretation of data.

PSYC 7540. Psychology of Disadvantaged and Minority Groups. 3 hours.
Psychological aspects of minority and disadvantaged groups in the United States and the impact of the discipline of psychology on these groups.

PSYC 7550. Treatment of Sexual Dysfunction. 3 hours.
Prerequisite: PSYC 8140.
Biological and psychological aspects of human sexual dysfunctions, with a discussion of interviewing, psychometric, behavioral, and psychophysiological approaches to assessment and common treatment methods.

PSYC 8000. Advanced Topics in Psychology. 3 hours. Repeatable for maximum 15 hours credit.
Current topics and new developments in the field of psychology.

PSYC 8060. Vision Seminar. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: PSYC 6920 or permission of department.
Specific topics in areas representative of contemporary research and theory in visual science.

PSYC 8070. Audition. 3 hours.
Prerequisite: Permission of department.
Theories of hearing and their experimental bases are examined in detail, along with demonstrations of experimental techniques in the area.

(PSYC)EPSY(LING) 8130. Psycholinguistics. 3 hours.
Recent theoretical and experimental work on the psychological aspects of semantics, grammar, and discourse processes are surveyed. Language development is also considered.

PSYC 8200. Operant Conditioning. 3 hours.
Theoretical and practical approaches to the assessment of free-ongoing behavior. Laboratory exercises in the circuitry and logic of operant conditioning apparatus and design are included.

PSYC 8220. Human Memory. 3 hours.
Major phenomena, experimental procedures, and theoretical models of human memory.

PSYC 8230. Classical Perception. 3 hours.
Classical problem areas of perception (e.g., contour, movement, illusions), with emphasis on the perceptual

process and its relation to other psychological functions.

PSYC 8240. Judgment and Decision-Making. 3 hours.
Prerequisite: Permission of department.
Theory and research on topics in judgment and decision-making, including heuristics-and-biases, rational decision theory, evolutionary approaches, causal judgment and applications to medicine, law, economics, social psychology, and everyday decisions. Emphasis is placed on how behavior compares with rational models.

PSYC 8250. Cognitive Theories and Models. 3 hours.
Prerequisite: PSYC 6630.
Cognitive theories and models proposed for human behavior in memory, reasoning, language, mathematics, judgment, imagery, problem solving, and thinking.

PSYC 8260. Applied Cognition. 3 hours.
Cognitive psychology with a perspective on applying knowledge from research on basic cognitive processes in attention, memory, knowledge representation, and decision making to the workplace.

PSYC 8270. Cognitive Research Seminar. 1 hour. Repeatable for maximum 5 hours credit.
Prerequisite: Permission of department.
Topics in cognitive psychology, including perception, memory, reading, attention, language, mathematics, and decision making.

PSYC 8280. Individual Differences in Child Cognition. 3 hours.
Prerequisite: PSYC 8800.
Theory and research in individual differences in children's cognitive development, with emphasis on the stability of intelligence, the modifiability of intelligence, and cognitive characteristics associated with individual differences in intelligence.

PSYC 8300. Neuroanatomy for Behavioral Scientists. 3 hours.
Prerequisite: PSYC 6910.
Basic, functional neuroanatomy of mammals, including humans, is emphasized to provide a foundation for understanding the neuroanatomical substrates of perception, motivation, emotion, learning, and other cognitive and behavioral processes.

PSYC 8310. Advanced Comparative Psychology. 3 hours.
Prerequisite: PSYC 6810.
Topics in comparative psychology which include history, relation to other disciplines, behavior genetics, ontogenetic principles and processes, and problems in the comparative study of complex processes.

PSYC 8330. Laboratory Apprenticeship in Biopsychology. 3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Approaches and research methods of physiological and comparative psychology.

PSYC 8350. Sociobiology. 3 hours.
Basic principles of sociobiology beginning with Wilson's classic book. The scientific theory will be emphasized while noting popular overextensions and common logical fallacies. Tinbergen's analysis of structure, proximate cause, ontogenetic cause, and evolutionary selective pressures will be used to critically evaluate conclusions.

PSYC 8360. Comparative Cognition. 3 hours.
Prerequisite: PSYC 6810 or PSYC 8310.
Traditional and contemporary, empirical and theoretical research which may be subsumed under "cognitive processes" and which has involved nonhuman animals. Among the topics will be Piagetian concepts, oddity and sameness-difference judgments, color, form, size, number, and "natural category" judgments, and other class and relational conceptual judgments.

PSYC 8370. Seminar in Comparative Psychology. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: PSYC 5780/7780 or PSYC 8360.
Particular problem areas within comparative psychology. Emphasis is placed upon the evaluation of current research and theory in the development of research ideas by the student.

PSYC 8380. Behavioral Neuroendocrinology. 3 hours.
Prerequisite: PSYC 6910 or CBIO 4730/6730.
Basic principles of neuroendocrinology and their applications to studies of activity, ingestive behavior, learning and memory, stress and emotion, and reproductive behavior.

PSYC 8390. Seminar in Physiological Psychology. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: PSYC 6910.
Particular problem areas within physiological psychology. Emphasis is placed upon evaluation of current research and theory and students' development of original research ideas.

PSYC 8500. Clinical Staffing Procedures. 1-3 hours. Repeatable for maximum 26 hours credit.
Prerequisite: Permission of major.
Practicum in clinical psychology. Supervised experience in assessment and treatment of clinical problems

using a wide variety of applicable techniques. Professional roles and ethical concepts of the clinical psychologist are integrated with clinical procedures.
Non-traditional format: Clinical staffing procedures, with meetings arranged between major professor and student.

PSYC 8510. Child Behavior Therapy. 3 hours.
Prerequisite: PSYC 8140.
Behavior change strategies for child behavior problems occurring in the home, school, or institution. Conduct problems, hyperactivity, learning problems, social withdrawal, mental retardation, and autism are among the disorders examined.

PSYC 8520. Behavioral Medicine/Health Psychology. 3 hours.
Prerequisite: PSYC 6650 and PSYC 6910 and permission of department.
The definition, scope, and research efforts in the field of behavioral medicine-health psychology will be discussed. The behavioral concomitants of select medical and psychophysiological disorders (e.g., cardiovascular, respiratory, and pain related problems) as well as psychologically based interventions.

PSYC 8540. Marital Dysfunction and Intervention. 3 hours.
Prerequisite: PSYC 8140.
Contemporary empirical research on marital functioning and the treatment of marital dysfunction with an emphasis on characteristics of concordant and discordant couples, theoretically divergent models of marital functioning, and the efficacy of available methods of therapeutic intervention.

PSYC 8550. Neuropsychological Assessment. 3 hours.
Prerequisite: PSYC 8300.
Theories of brain function in the human. Methods of detecting abnormal functioning and the localization of such abnormal functioning by behavioral methods. Possible etiologies of such lesions.

PSYC 8600. Comparative Behavioral Development. 3 hours.
Prerequisite: PSYC 8800 or permission of department.
The interface between biology and psychology in the study of development. Evolutionary and psychobiological approaches to behavioral development across species and consideration of human behavioral development from these perspectives.

PSYC 8610. Psychophysical Methods and Psychological Scaling. 3 hours.
Methods and appropriate theories to the investigation and scaling of sensory and nonsensory stimulus events. Single and multidimensional scales.

PSYC 8710. Theories of Attitude Structure, Formation, and Change. 3 hours.
Prerequisite: PSYC 6640.
Theoretical approaches to the organization and formation of beliefs and attitudes to cognitive consistency, and to the determinants of attitude stability and change.

PSYC 8720. Group Structure and Process. 3 hours.
Prerequisite: PSYC 6640.
Situational and individual determinants of social structure and interaction in face-to-face groups. Various theories of exchange, equity, power, and leadership.

PSYC 8730. Theories of Social Psychology. 3 hours.
Prerequisite: Permission of department.
Theoretical and conceptual frames of reference that contribute to our knowledge of social psychology, including consideration of such theories as cognitive consistency, social exchange, symbolic interaction, role theory, group process, and collective behavior.

PSYC 8790. Advanced Seminar in Social Psychology. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PSYC 6640.
Illustrative topics are social motivation, conformity, social power, interpersonal perception, simulation and mathematical models of social behavior, and vicarious learning.

PSYC 8810. Psychology of Health and Illness. 3 hours.
Psychological influences on health, illness, and responses to those states. Psychological origins and outcomes of health policy and health interventions.

PSYC 8830. Cognition and Aging. 3 hours.
Prerequisite: PSYC 6630.
Topics in cognition and aging, including age-related changes in memory, problem-solving, reasoning, intelligence, and attention; role of compensatory mechanisms, structures, and processes, including experience, expertise, knowledge structures, and wisdom.

PSYC 8840. Personality and Social Development. 3 hours.
Literature relevant to early childhood determinants and developmental processes to personality and social behavior. Current research, theories, and methodological issues.

PSYC 8850. Perceptual Development. 3 hours.
Prerequisite: PSYC 6920 or PSYC 8230.
Ontogenetic changes in perception and their importance for cognitive processes with emphasis on the implications of these changes for perceptual theories.

PSYC 8860. Cognitive Development: Infancy to Adolescence. 3 hours.
Prerequisite: PSYC 8800.
Current research on problems, issues, and theories relevant to the development of complex cognitive processes in infancy, childhood, and adolescence.

PSYC 8870. Theories of Psychological Development. 3 hours.
Prerequisite: PSYC 8800.
Logical and empirical adequacies of modern theories of psychological development in relation to selected issues relevant to theory construction in the behavior sciences.

PSYC 8880. Human Sexual Behavior. 3 hours.
Nature and variety of human sexual behavior in many settings.

PSYC 8890. Seminar in Developmental Processes. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Current topics in developmental psychology. Emphasis on independent study and research.

PSYC 8900. Psychopharmacology Seminar. 3 hours.
Prerequisite: PSYC 6910.
Psychopharmacology literature. Emphasis is placed on basic behavioral research. Pharmacotherapy and clinical topics.

(PSYC)CHFD 8920. Behavior Problems in Children. 3 hours.
Prerequisite: Permission of department.
The child's adjustment to his or her environment with a consideration of the causes, treatment, and prevention of behavior problems. Utilization of case materials and research problems in the field will be carried out by the student.

PSYC 8930. Advanced Psychological Measurement. 3 hours.
Prerequisite: PSYC 6150.
Modern test theory approaches to test construction, reliability, validity, item, and factor analysis.

PSYC 8940. Cognitive Measurement. 3 hours.
Prerequisite: PSYC 8930.
Classical and contemporary readings related to the applications of measurement to industry, education, and related areas of the behavioral sciences.

PSYC 8950. Non-Cognitive Measurement. 3 hours.
Prerequisite: PSYC 8930.
Approaches to interest and personality measurement, artifacts and methodology, dimensions, organization, and utility.

PSYC 8960. Training and Development. 3 hours.
Prerequisite: Permission of department.
Principle systems and techniques applicable to industrial and organizational training and to management development.

PSYC 8980. Seminar in Industrial-Organizational Psychology. 3 hours. Repeatable for maximum 18 hours credit.
Consideration of significant and current topics in industrial-organizational psychology as determined by the interests and research activities of the faculty.

PSYC 8990. Seminar in Psychometrics. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PSYC 6430 or PSYC 8930.
Consideration of significant and current topics are defined by the interests and research activities of the faculty.

PSYC 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

PSYC 9100. Special Problems. 1-15 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Extensive readings or empirical research in selected areas or planning and pilot studies preparatory to a thesis.

PSYC 9200. Clinical Internship in Psychology. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of major.
Professional practice of clinical psychology under constant and close supervision. This professional work will include treatment of patients, group and individual psychotherapy, teaching, and research.

PSYC 9250. Internship in Industrial and Organizational Psychology. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of major.
Professional practice of industrial and organizational psychology under close supervision. This professional work will include work with organizations, teaching, and research.

PSYC 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

PSYC 9880. Seminar in Staffing. 3 hours.
Prerequisite: PSYC 6140 or permission of department.
Methods appropriate to the development and administration of the staffing process in contemporary organizations. The strategies and the statistics of the validation of personnel screening devices: personnel testing, interviewing, and biographical information.

Religion

David S. Williams, *Head*
Carolyn Medine, *Graduate Coordinator,*
542-0308
(Peabody Hall)

The department offers a comprehensive program of studies in the field of religion leading to the MA degree. Areas of concentration are in Biblical studies, Christian studies, Jewish studies, Islamic studies, and Indian and East Asian religious studies. Various methodologies are employed in these areas. Admission to the MA program presupposes a thorough background in religious studies. The graduate program is designed to give the student a broad and thorough training in the field of religion with a specialization in some area of concentration.

For the MA degree, reading knowledge of one foreign language is required.

Permission of department is a prerequisite for these courses unless otherwise stated.

Religion

RELI 4001/6001. Old Testament/Hebrew Bible Literature. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The nature, content, and problems of the Old Testament/Hebrew Bible, with attention given to historical data, literary forms, and ancient Near Eastern cultural backgrounds.

RELI 4002/6002. Prophetic Literature of the Old Testament/Hebrew Bible. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The origin and development of the phenomenon of prophecy as it existed throughout the history of ancient Israel.

RELI 4003/6003. Ancient Israelite Religion. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Origins of the religion of ancient Israel, its emergence from and continuities with ancient West Semitic religion and culture. Historical and comparative methods, emphasizing current knowledge of Near Eastern history and religions contemporary with ancient Israel.

RELI 4040/6040. Apocalyptic Literature. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Apocalyptic literature from its origins in the sixth and fifth centuries BCE down to its flourishing in Hellenistic and Roman times. Texts to be studied include Isaiah 24-27, 40-66, Zechariah 9-14, Joel, Malachi, Daniel, I Enoch, IV Ezra, Baruch, Qumran material, Mark 13 and the Book of Revelation. Questions bearing on contemporary theological significance will also be discussed.

RELI 4070/6070. Judaism. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The interaction of Jewish history and Western civilization, with emphasis upon the development of Jewish religion in the biblical, rabbinic, and modern periods.

RELI 4071/6071. The Holocaust. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The background and legacy of the destruction of European Jewry from 1933 to 1945. Topics include: the historical context, Holocaust art, literature, and film, the reactions of rescuers and bystanders, and theological issues raised by the Holocaust.

RELI 4072/6072. American Judaism. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
An examination of what it means, and has meant, to be a Jew in the United States, with emphasis upon the historical experience and religious expressions of American Jews.

RELI 4080/6080. New Testament Literature. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The nature, content, and problems of New Testament literature, with particular attention given to its canonization and textual transmission.

RELI 4081/6081. Jesus. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Although primarily a study of what Jesus taught, attention is given to the literary and environmental back-

ground of his teaching, the historical life of the teacher, and the contemporary validity of what he taught.

RELI 4082/6082. Life and Letters of Paul. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
An historical-exegetical study of the life and letters of Paul, the relation between Acts and the Pauline epistles, early non-Pauline Gentile Christianity, Pauline theology, and its lasting impression on Christianity.

RELI 4083/6083. The New Testament World. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The political, social and religious influences on the New Testament writings. Special attention is given to intertestamental Judaism and Hellenistic and Roman religion as background to New Testament Christianity.

RELI 4101/6101. History of Christian Theology (Ancient-Medieval). 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The development of Christian thought from the first through the fourteenth century as expressed in the writings and practices of the Christian community and its leading thinkers.

RELI 4102/6102. History of Christian Theology (Modern-Contemporary). 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The development of Christian thought from the fifteenth century to the present as expressed in the writings and practices of the Christian community and its leading thinkers.

RELI 4105/6105. Women in Christian History. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The relationship between women and Christianity, particularly concerning matters involving gender equality in church and society.

RELI 4106/6106. Women in Early Christian Literature. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
An exploration of biblical and other literature in the first five hundred years of Christianity focused on examining women's participation and leadership.

RELI 4107/6107. American Religious History. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Major and innovative religious organizations, ideas, movements, and personalities as they express themselves in particular religious settings as well as the manner in which they have influenced other aspects of American culture.

RELI(AFAM) 4201/6201. African American Religious History. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The religious traditions of African Americans from Colonial times to the present; major religious movements, personalities, and ideas and their relationship to various aspects of American culture.

RELI(AFAM) 4202/6202. Southern Religious History. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The origins, growth, and current practices of religion in the American South. The interaction between religion and other aspects of Southern culture, such as racial and gender concerns, education, Darwinian science, temperance, and politics.

RELI(AFAM) 4203/6203. The Bible in the Black Church. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Biblical interpretation in black America from 1865 to the present.

RELI 4300/6300. Islam and Its World. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Islam as a religious and sociocultural phenomenon. The fundamental principles of the Islamic faith, Qu'ran, the Sunna of Muhammad, Islamic sectarianism, Islamic law, theology, and mysticism, and themes in Islamic art. The course will also survey Islam in its various forms throughout the world.

RELI 4301/6301. Islamic Thought in the Caliphal Age. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Islamic scholarship from the eighth through the fourteenth centuries. Principal topics covered will include the Qur'an and Qur'anic exegesis, the Hadith tradition, Islamic law, theology, philosophy, and Sufi mysticism.

RELI 4302/6302. Islam and the Modern World. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Islamic modernism and revivalism as a response to Western cultural penetration since the eighteenth century. Subjects covered will include Sufi reformism,

Wahhabism, the Salafiyya movement, Islamic "Fundamentalism," the Iranian Revolution, women's rights, and Western perceptions of Islam.

RELI 4303/6303. The Sufi Way. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Islamic mysticism, both as a set of metaphysical doctrines and as it is expressed in religious practices. Particular attention will be given to the doctrinal development of Sufism, its literature, major figures, and the process of consciousness transformation.

RELI 4304/6304. The Koran, Sacred Text of Islam. 3 hours.
Undergraduate prerequisite: Junior standing or permission of department.
Historical, thematic study of the Islamic sacred text, the Koran, including textual history, its compilation, and the stages that led to its printed form. There will also be an introduction to basic technical terms of the Koranic sciences, Koranic hermeneutics, and Arabic script and phonology.

RELI 4305/6305. Mohammad, Life and Teachings from Earliest Sources. 3 hours.
Historical, thematic, detailed study of the life of Mohammad, the prophet of Islam, from earliest sources. An examination of biographical (sirah) material, the Transmitted Traditions (hadith), and debates about the Traditions. The introduction to Arabic script and phonology will permit students to read a few of Mohammad's short sayings.

RELI(CMLT) 4307/6307. Comparative Islamic Literature. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The major genres of Islamic literature and its principle concepts, covering Qur'anic, hadith, legal and political literature, philosophy, theology, historiography, hagiography, and poetry, emphasizing the Medieval period and mystical prose and poetry primarily in Arabic, Persian, and Turkish. The works will be in English translation. A writing intensive course.

RELI 4310/6310. Islam and Islamic Culture in Morocco. 3 hours.
Undergraduate prerequisite: Junior standing or permission of department.
An examination of Islam and Islamic culture in Morocco. The course covers basic Islamic beliefs and practices and the most significant aspects of Islamic culture in Morocco, such as music, art, and architecture.
Non-traditional format: This is a maymester summer abroad program and will thus entail, with the course work, extensive travel throughout Morocco and homestays with Moroccan families. The educational experience of this course will be of an on-going "immersion" type.

RELI 4400/6400. The History of Religions. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The nature of early primitive religions and the main outlines of the chief living religions of the world. The method will be both historical and analytical.

RELI 4401/6401. The Buddhist Tradition. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Buddhism from its origin in the life and teachings of the Buddha through the period of philosophical ferment in India, and its thought and institutions in the East and the West up to the present.

RELI 4402/6402. Confucianism and Chinese Tradition. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Confucianism and its place in traditional Chinese religion, thought, and culture. Emphasis on the teachings of foundational thinkers such as Confucius, Mencius, and Hsun-tzu.

RELI 4403/6403. The Taoist Tradition. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Taoism and its place in traditional Chinese religion, thought, and culture. Emphasis on the classical texts, Lao-tzu and Chuang-tzu; the evolution of the later Taoist religion; and the many varieties of Taoist spirituality.

RELI 4404/6404. Japanese Religion. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Religion in Japan from earliest times to the present, with emphasis upon Shinto, the domestication of Buddhism, and the relationship of religion to the Japanese state and "national identity." Particular attention given to the development of Zen in Japan.

RELI(PHIL) 4500/6500. Philosophy of Religion. 3 hours.
Undergraduate prerequisite: RELI 1003 or PHIL 1000 or PHIL 2200 or PHIL 2400.
The meaning, nature, and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and humanity's relation to God.

RELI 4510/6510. Indian Religions. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.

The basic contours of thought and practice of selected Indian religions, including the Vedas, Upanishads, Hinduism, Buddhism, Jainism, Sufism, Sikhism, and the epic and poetic traditions.

RELI 4520/6520. Constructive Theology. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The aims, methods, and content of theology as related to the theistic religions of humanity.

RELI 4530/6530. Theology and Culture. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
The relation of theology to philosophy, science, technology, and the arts, with special attention to the theological attempts to deal with the impact of science and technology upon culture and civilization.

RELI(ANTH) 4640/6640. Anthropology of Religion. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Anthropological approaches to the world's major religions as they relate to complex societies.

RELI 4910/6910. Topics in Asian Religions. 3 hours. Repeatable for maximum 9 hours credit. 9 hours lab per week.
Undergraduate prerequisite: RELI 3300 or permission of department.
Selected topics in the study of one or more of the religions of Asia.

RELI 7000. Master's Research. 1-3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

RELI 7300. Master's Thesis. 1-3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

RELI 7770. Theories and Methods in Religious Study and Pedagogy. 3 hours.
Not open to students with credit in RELI 6000.
Theories, methodologies, and issues involved in the academic study, research, and teaching of religion. This course is required of all entering graduate students in religion and open to students in other departments.

RELI 7771. Teaching Religious Studies. 1 hour.
Prerequisite: RELI 7770.
Materials, techniques, and objectives for teaching introductory undergraduate courses in religious studies. Particular attention given to presenting lectures, leading discussions, constructing examinations, incorporating instructional technology, and dealing with issues of classroom management.

RELI 8450. Seminar in Problems and Topics in Biblical Research. 3 hours. Repeatable for maximum 9 hours credit. 1 hour lecture and 2 hours lab per week.
Major issues in Old Testament (Hebrew Bible) and/or New Testament research. Pentateuchal criticism, prophecy, apocalyptic movements, wisdom literature, the history of Religion of Ancient Israel, the text of the New Testament, the canon of the New Testament, Synoptic Gospels, Jesus, and Paul. Some topics will require a reading knowledge of Greek and/or Hebrew.

RELI 8460. Seminar in Problems and Topics in Judaism. 3 hours. Repeatable for maximum 9 hours credit. 1 hour lecture and 2 hours lab per week.
A major field or issue in Judaic studies such as Rabbinic literature, Jewish Mysticism, or Post-Holocaust Theology, or a particular Jewish thinker or school of thought. Some topics will require a reading knowledge of Hebrew.

RELI 8480. Seminar in Problems and Topics in Islamic Research. 3 hours. Repeatable for maximum 9 hours credit. 1 hour lecture and 2 hours lab per week.
Major issues in Islamic studies, Qur'anic exegesis, Islamic law, philosophy, history, literature, hadith, sectarianism, and Sufism.

RELI 8490. Seminar in Problems and Topics in Asian Religions. 3 hours. Repeatable for maximum 9 hours credit. 1 hour lecture and 2 hours lab per week.
Issues in one or more religions of South or East Asia, focusing on textual, historical, and/or interpretive problems.

RELI 8500. Seminar in the History of Christian Thought. 3 hours. Repeatable for maximum 9 hours credit. 1 hour lecture and 2 hours lab per week.
Prerequisite: RELI 4102/6102 or permission of department.
The life, thought, and religious activities of a selected major or innovative Christian leader and his/her impact on the development of Christianity.

RELI 8510. Seminar in Problems and Topics in Theology. 3 hours. Repeatable for maximum 9 hours credit. 1 hour lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Traditional and contemporary problems and topics in theology. Substantive and methodological issues will be addressed.

RELI 8520. Seminar in Christian Theologians. 3 hours. Repeatable for maximum 9 hours credit. 1 hour lecture and 2 hours lab per week.
Prerequisite: Permission of department.
The works of Christian theologians both past and present. Substantive and methodological issues will be addressed.

(RELI)PHIL 8630. Seminar in Philosophy of Religion. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Major topics in the philosophy of religion, such as the nature and existence of God, the problem of evil, and the character of religious discourse.

RELI 8700. Seminar in Problems and Topics in Religion Research. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Major issues in religion research. Topics will vary according to the area of discussion. Such areas will include biblical studies, religious history and philosophy, rabbinics, Islamics, Buddhism, canonical criticism.

Arabic

ARAB 4000/6000. Moroccan Dialectical Arabic. 3 hours.
Undergraduate prerequisite: Junior standing or permission of department.
Graduate prerequisite: One year of Arabic.
Provides a basic capacity for "survival" Moroccan Arabic through the study of essential vocabulary and communication skills. Emphasizes the use of day to day language necessary for student researchers of Moroccan culture by utilizing classroom training, "homestays" with Moroccan families, and interactions with Moroccans.

ARAB 4100/6100. Reading and Research in Arabic and Islamic Literature. 3 hours. Repeatable for maximum 9 hours credit. 9 hours lab per week.
Undergraduate prerequisite: ARAB 2004 or permission of department.
Arabic and Islamic texts with emphasis upon extensive reading and individual and/or group research projects. Qualified students may study Persian and/or Turkish texts.

Hebrew

HEBR 4100/6100. Reading and Research in Hebrew Literature. 3 hours. Repeatable for maximum 9 hours credit. 9 hours lab per week.
Undergraduate prerequisite: HEBR 2004 or permission of department.
Directed study in reading and research in classical Hebrew literature.

Semitic

SEMI 4001/6001. Elementary Aramaic/Syriac. 3 hours.
Undergraduate prerequisite: HEBR 2004 or permission of department.
Aramaic and/or Syriac grammar, especially as related to Hebrew, along with simple readings from religious texts.

SEMI 8100. Seminar in Northwest Semitic Epigraphy. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: HEBR 2004 or permission of department.
Various Northwest Semitic inscriptions. Areas of concentration will vary, including Ugaritic, Phoenician, Punic, and Moabite as well as extra biblical Hebrew and Aramaic inscriptions.

Romance Languages

Noel Fallows, *Head*
Julie Greer Johnson, *Graduate Coordinator,*
542-3165
(Gilbert Hall)

The MA is offered with a major in French, Spanish, or Romance Languages. Course work, a written examination, a thesis and final oral defense, are required for the major. A reading examination (or a grade of B or better in a course at the 2002 level or higher) in one language (exclusive of the major language or English) must also be completed before the Admission to Candidacy may be filed. Options in French Linguistics, Spanish Linguistics, and Romance Linguistics are offered for the MA. The MA in French (Literature Option) includes 15 hours of required course work (FREN 6200, FREN 6300, FREN 6400, FREN 6500, FREN 7700 (the latter required of teaching assistants)), 3 required hours of thesis writing (FREN 7300) and 9 hours of elective course credit. The MA in French (Linguistic Option) includes 15 hours of required course work (FREN 6630, FREN 6700, FREN 6800, FREN 6910, and FREN 7700 (the latter required of teaching assistants only)), 9 hours of elective course credit, and 3 hours of thesis writing (FREN 7300). The MA in Spanish (Literature Option) includes 18 hours of required course work, 6 to be selected from SPAN 6100, SPAN 6200, SPAN 6300, SPAN 6400 and 9 to be selected from SPAN 6500, SPAN 6600, SPAN 6700, SPAN 6800, SPAN 6900, in addition to SPAN 7750 (the latter required of all teaching assistants). 6 hours of elective course credit and 3 hours of thesis writing (SPAN 7300) also are required. The MA in Spanish (Linguistics Option) includes 15 hours of required course work (SPAN 7750 (required of all teaching assistants)) and at least 12 hours from among SPAN 6550, SPAN 6650, SPAN 6750, SPAN 6850, SPAN 6950, 9 hours of elective course work (which may include up to 6 hours of graduate courses with the LING prefix; otherwise the electives must be selected from graduate courses with the SPAN or ROML prefixes), and 3 hours of thesis writing (SPAN 7300). The MA in Romance Languages (Literature Option) includes 27 hours of elective course work, 15 of which must be in the studentís major language and 12 of which must be in the studentís minor language, and 3 hours of thesis writing (ROML 7300). The MA in Romance Languages (Linguistics Option) includes 27 hours of elective course work, 12 hours of which must be in French and Spanish linguistics, and 3 hours of thesis writing (ROML 7300).

The MAT is offered with majors in French, Spanish, and Romance Languages. Course work and a final examination are required for the major. All courses must be approved by the student's advisory committee. The MAT in French includes 3 hours of required course work (Methods of Research in Education) and 30 hours of elective course work, 6 hours of which must be taken in the College of Education. The MAT in Spanish includes 33 hours of course work with the SPAN or SPAN (LING) prefix, of which 24 are required (SPAN 6550, SPAN 6650, SPAN 6750, SPAN 6850, SPAN 6950, SPAN 7750, SPAN 6120, SPAN 6800) and 9 are elective (any literature class and any two additional courses, allw ith the SPAN prefix), and a 1-3 hour teaching practicum (SPAN 6091). The MAT in Romance Languages includes 3 hours of required course work (Methods of Research in Education) and 30 hours of elective course work, 6 hours of which must be taken in the College of Education.

The PhD is offered in Romance Languages with a major in French, Portuguese, or Spanish and a minor in a discipline or an interdisciplinary field related to the major. A minimum of 12 graduate courses, preliminary examinations, a dissertation and a final oral defense are required. The minor consists of 3 or 4 courses (of the 12 required) and, with the approval of the studentís advisory committee, may include isolated graduate courses outside the major or minor fields. A reading knowledge of one foreign language (exclusive of the major language and English) is required. The PhD in Romance Languages includes 36 hours of elective credit and 3 hours of dissertation writing (ROML 9300).

French

FREN 4120/6120. Topics in French Culture, Language, and Literature. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: FREN 3030 and FREN (LING) 3090.
Selected topics in French and Francophone culture, civilization, language, linguistics, literature, or literary theory. Given in French.

FREN 6200. Francophone Cultures and Literatures. 3 hours.
The major areas of the Francophone world: North America, Antilles, Africa, Maghreb, and Indian Ocean. Literary works will be examined in their linguistic and cultural contexts.

FREN 6300. Medieval and Renaissance Texts and Contexts. 3 hours.
Significant developments in the language, literature, and civilization of France from the Middle Ages through the Renaissance. Discussions will consider writers and genres, linguistic theory, popular culture, and the arts with special attention to historical, social, and political context. Given in French.

FREN 6400. Self, Power, and the Rise of the Modern State. 3 hours.
For the period 1598 to 1789, the literary and other cultural manifestations indicating the emergence of the modern notion of the individual, as well as the modern state. Given in French.

FREN 6500. Revolutions: Artistic and Otherwise. 3 hours.
Literary and non-literary works in their contexts from the nineteenth and twentieth centuries in France. Literary movements from Romanticism to Poststructuralism may be studied, as well as the literary and social influences brought about by the wars and revolutions of this period. Given in French.

FREN(LING) 6630. The French Sound System in a Social Context. 3 hours.
French phonetics: the sounds of French as they relate to levels of language from the vernacular to literature. An examination of how sounds vary with relation to region and social class. Practice in class and in the language laboratory. Given in French.

FREN(LING) 6700. Applied French Linguistics. 3 hours.
Phonology of French as it determines the underlying forms of morphology with an application to the teaching of French to non-native speakers. Emphasis on the concepts of variation, acceptability, and cultural sensitivity. Given in French.

FREN(LING) 6800. French Syntax and Meaning. 3 hours.
The syntax of modern French through readings in descriptive analysis and examples of literary texts to see how word order contributes to meaning. Particular emphasis on levels of style and reflections of social class. Frequent compositions required. Given in French.

FREN(LING) 6910. History of the French Language in its Social and Literary Context. 3 hours.
The major changes in the history of the French language, with special attention to the interaction of linguistic and societal changes and to the representation of these changes in literary texts. Given in French.

FREN 7000. Master's Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

FREN 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

FREN(LING) 7700. Teaching College French. 3 hours.
Principles and methods of second language teaching applied to French. An analysis of techniques used to teach listening, speaking, reading, writing, and culture, with an examination of current theories of language acquisition. Given in French.

FREN 8100. Seminar in Medieval Studies. 3 hours. Repeatable for maximum 9 hours credit.
Topics in medieval literature, language, and culture. Study of a particular problem, author, genre, or linguistic topic will be integrated into the larger cultural context of medieval France. Given in French.

FREN 8180. Literary Theory. 3 hours.
Theories that have special relevance for understanding French literature, linguistics, and cultural studies. Readings, discussions, and assignments in French. Readings by Bal, Barthes, Baudrillard, Benveniste, Bourdieu, Genette, Irigaray, Jakobson, Kristeva, Lçvi-Strauss, Riffaterre. Emphasis on structuralism, poststructuralism, cultural studies, narratology, and feminism. Given in French.

FREN 8200. Seminar in Renaissance Studies. 3 hours. Repeatable for maximum 9 hours credit.
In-depth study of a major author or special topic related to the French Renaissance. Given in French.

FREN 8300. Seminar in Seventeenth-Century Studies. 3 hours. Repeatable for maximum 9 hours credit.
Doctoral-level seminar in French seventeenth-century studies. Given in French.

FREN 8400. Seminar in Eighteenth-Century Studies. 3 hours. Repeatable for maximum 9 hours credit.
Doctoral-level seminar in French eighteenth-century studies. Given in French.

FREN 8500. Seminar in Nineteenth-Century Studies. 3 hours. Repeatable for maximum 9 hours credit.
An intensive study of one major nineteenth-century author or literary movement. Given in French.

FREN 8600. Seminar in Twentieth-Century Studies. 3 hours. Repeatable for maximum 9 hours credit.
A major author, group of authors, theme, genre topic or movement in French or Francophone literature. Given in French.

FREN 8700. Seminar in Francophone Studies. 3 hours. Repeatable for maximum 9 hours credit.
In-depth study of one or several writers, representative of one of the major Francophone areas in the world: North America, Antilles, Africa, Maghreb, and Indian Ocean. Although the primary emphasis will be on literary works, they will be studied in their linguistic and cultural contexts.

FREN(LING) 8800. Seminar in French Linguistics. 3 hours. Repeatable for maximum 9 hours credit.
Topics and issues in French linguistics. Possible offerings include Old French, French dialectology, French sociolinguistics, and French semantics and pragmatics. Given in French.

Italian

ITAL 4040/6040. Topics in Italian Cinema, Culture, and Literature. 3 hours.
Specific aspects of Italian cinema, culture, and literature. Topics to be selected according to the needs and interests of the students. Taught in seminar fashion with extensive outside readings of primary and secondary sources. Given in English.

ITAL 4120/6120. Topics in Italian Culture, Language, and Literature. 3 hours. Repeatable for maximum 45 hours credit.
Undergraduate prerequisite: ITAL 4010 or ITAL 4050 or ITAL 4060 or ITAL 4070.
Selected topics in Italian culture, civilization, language, literature, or literary theory. Given in Italian.

Portuguese

PORT 4010/6010. Advanced Language, Literature, and Culture of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: PORT 3010 or permission of department.
Linguistic, cultural, and literary structures in Portuguese-speaking societies. Emphasis is divided between students' abilities to express themselves fluently in oral and written Portuguese and to identify and contextualize main literary genres and movements. Given in Portuguese.

PORT 4040/6040. Topics in Cinema, Culture, and Literature in the Portuguese-Speaking World. 3 hours.
Specific aspects of cinema, culture, and literature of the Portuguese-speaking world. Topics to be selected according to the needs and interests of the students. Taught in seminar fashion with extensive outside readings of primary and secondary sources. Given in English.

PORT 4050/6050. Prose of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: PORT 3010 or PORT 4010/6010 or permission of department.
Representative prose texts from Portugal, Brazil, and Lusophone Africa analyzed in their cultural, social, and political contexts. Given in Portuguese.

PORT 4060/6060. Poetry of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: PORT 3010 or PORT 4010/6010 or permission of department.
Representative poetic texts from Portugal, Brazil, and Lusophone Africa analyzed in their cultural, social, and political contexts. Given in Portuguese.

PORT 4070/6070. Theater of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: PORT 3010 or PORT 4010/6010 or permission of department.
Representative plays from Portugal and Brazil analyzed with emphasis on drama as a literary genre, specific aspects of staging and performance, and socio-political context of theatrical production. Given in Portuguese.

PORT 4080/6080. Studies in Culture and Literature of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: PORT 3010 or PORT 4010/6010 or permission of department.
Studies in culture and literature of the Portuguese-speaking world. Selected topics of special interest in their cultural, social, and political context.

Romance

(ROML)AFAM 4860/6860. Topics in Afro-Hispanic Identity. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Representations of Africa and African American culture in Hispanic Literature by writers of African descent. By covering a variety of genres, the course will provide discussion about a cultural identity that is constantly in dialogue with dominant discourses. The course will incorporate critical texts.

ROML 6091. Graduate Practicum in Study Abroad. 3-9 hours. Repeatable for maximum 18 hours credit.
Mentoring and tutoring of undergraduate students participating in study abroad programs sponsored by the Department of Romance Languages. Graduate students work directly with the students abroad in order to ease their transition, and tutor them in an assigned subject. Written final report required. Course does not count towards the program of study.

ROML 7000. Master's Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ROML 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ROML(LING) 8000. Topics in Romance Languages. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Specific aspects of Romance languages, linguistics, literatures, or cultures.

ROML 8500. Readings and Research in Romance Languages. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Extensive readings in the field of the student's program of study determined by the student's previous background, presuming that the student is capable of reading rapidly with comprehension.

ROML 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ROML 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Spanish

SPAN 4120/6120. Topics in Spanish Culture, Language, and Literature. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: SPAN 3030 and SPAN (LING) 3050.
Selected topics in Hispanic culture, civilization, language, linguistics, literature, or literary theory. Given in Spanish.

SPAN 6100. Medieval and Renaissance Texts and Contexts. 3 hours.
Representative texts from the Spanish Middle Ages through the Renaissance, including narrative fiction (poetry, prose, drama) and historiographic writings, such as chronicles and memoirs. Given in Spanish.

SPAN 6200. Empire and its Discontents in the Early Modern Era. 3 hours.
Representative texts from all genres of the late Renaissance through the Baroque, Spain's so-called "Golden Age." Given in Spanish.

SPAN 6300. Regional Identities and Artistic Innovations in Modern Spain. 3 hours.
Representative texts from all genres of the Spanish Enlightenment through the Spanish Civil War. Given in Spanish.

SPAN 6400. Peninsular Identities from the Civil War to the Present. 3 hours.
Representative texts from all genres of contemporary Spanish literature from the post-Civil War period through Postmodernism. Given in Spanish.

SPAN 6500. Transatlantic Encounters: New World Discoveries, Explorations, and Colonizations. 3 hours.
Readings from a wide variety of texts, such as chronicles, letters and "relaciones," that articulate, reflect, and ponder upon New World encounters in the Early Modern Era. Given in Spanish.

SPAN(LING) 6550. History of the Spanish Language. 3 hours.
The major linguistic changes in the history of the Spanish language, including the interaction of linguistic and societal changes and the representation of these changes in texts.

SPAN 6600. Formation of Nationhood in Spanish America. 3 hours.
Selected readings from nineteenth-century Spanish America, with particular emphasis placed on the literatures of nationhood and independence. Given in Spanish.

SPAN(LING) 6650. Spanish Phonetics and Phonology. 3 hours.
The Spanish sound system using core concepts of linguistics in general and phonology in particular. Characterization and transcription of spoken Spanish. Analysis of important phenomena of language variation in the Hispanic world, including national, geographical, historical, and social dialects. Given in Spanish.

SPAN 6700. Spanish America from Modernism to Postmodernism. 3 hours.
Representative texts from all genres of Spanish American literature from the Modernist to the Postmodern periods. Given in Spanish.

SPAN(LING) 6750. Spanish Syntax and Morphology. 3 hours.
Grammar and language usage in the study of the syntactic and morphological structures of Spanish. The syntax and morphology of the pronoun and verb systems, agreement phenomena, gerunds, comparisons, and modal and aspectual distinctions. Written self-expression on a variety of issues as practical applica-

tion of grammatical structures discussed in class. Given in Spanish.

SPAN 6800. Erasing Boundaries: Latina/o Literature of the United States. 3 hours.
Selected readings that articulate, contextualize, and define the complexities of Latina/o language, literature, and culture in the United States. Given in Spanish.

SPAN(LING) 6850. Spanish Applied Linguistics. 3 hours.
Phonetic and morpho-syntactic structures that are problematic for the English-speaking student of Spanish. Ways in which culture is encoded in language. Implications of Spanish linguistics for the teaching and learning of Spanish and the linguistic education of language teachers. Given in Spanish.

SPAN(LING) 6950. Spanish Semantics and Pragmatics. 3 hours.
Semantic and pragmatic approaches to the study of meaning in Spanish. Differences between sentence meaning and speaker meaning. Analysis of types of discourse in Spanish such as narrative and free conversation. Given in Spanish.

SPAN 7000. Master's Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

SPAN 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

SPAN(LING) 7750. Teaching College Spanish. 3 hours.
Foreign language teaching and learning applied to Spanish. Theories of second language acquisition. Techniques and strategies to teach listening, speaking, reading, writing, and culture in context. Activities and procedures of classroom instruction. Issues in the professionalization of Spanish teachers. Given in Spanish.

SPAN(LING) 8010. Topics in Culture, Language, Linguistics, and Literature of the Spanish-Speaking World Seminar. 3 hours. Repeatable for maximum 9 hours credit.
An intensive, integrative, and contextualized study of a specific representative topic in language, literature, culture, and linguistics of the Spanish-speaking world. Given in Spanish.

SPAN 8100. Poetry and Poetics. 3 hours.
Poetry and poetics from Spain and/or Spanish America, which may include Latino/a poetry and poetics in the United States. Given in Spanish.

SPAN 8180. Literary and Cultural Theories and Criticism. 3 hours.
The theories and practices that have shaped Hispanic literature, with particular emphasis on some of the central issues that animate theoretical debates among literary scholars today. Given in Spanish.

SPAN 8200. Narrative Discourses. 3 hours.
Fictional narrative discourses from Spain and/or Spanish America, which may include Latino/a texts written and conceived in the United States. Given in Spanish.

SPAN 8300. Hispanic Thought. 3 hours.
An analysis of different ways in which Spaniards and Spanish Americans have approached complex philosophical problems, such as self-definition and cultural identity. Given in Spanish.

SPAN 8400. Performance Studies: From the Stage/Screen to the Page. 3 hours.
Exploration of broad and flexible conceptions of theater, theatricality, and/or film in the Spanish-speaking world. Given in Spanish.

SPAN 8500. Issues of Race, Class, and Gender. 3 hours.
An exploration of how the interests of race, class, and gender are presented in Hispanic literatures. Given in Spanish.

Sociology

E. M. Beck, Jr., *Head*
Mark Cooney, *Graduate Coordinator,* 542-3212 *(Baldwin Hall)*

The department offers programs leading to the degrees Master of Arts and Doctor of Philosophy in sociology. Specialized study is provided in four areas: work, organizations, and occupations; deviance, criminology and law; social psychology and culture; and race, gender, and inequality. No foreign language is required for the master's or doctoral degrees.

The department has cooperative programs with the Women's Studies Program and the Public Administration Program. Research facilities include the Baldwin Data Analysis Center, the

Institute for Behavioral Research, and the Survey Research Center.

SOCI 4240/6240. Sociology of War and the Military. 3 hours.
Undergraduate prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
War as a phenomenon with social causes and consequences; the military as an occupation and organization. Topics include conscription; the historical experiences of women and minorities in the military; and war as a source of collective memory for generations, ethnic groups, and nations.

(SOCI)CHFD 4610/6610. The Family. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Family study utilizing data from the fields of anthropology, individual and social psychology, history, sociology, economics, and psychiatry.

SOCI 4650/6650. Sociology of Aging. 3 hours.
Undergraduate prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The status, roles, and demographic aspects of the aging population and its relationship with social institutions.

SOCI 6010. Sociological Approaches to Culture. 3 hours.
Case studies of art, music, literature, rituals and ceremony, food, dress, and other cultural objects. Topics include the dimensions of cultural objects; structuralist, postmodern, functionalist and semiotic perspectives; and basic issues such as consensus and diversity, ideology, collective memory and tradition, religion, social solidarity, conflict, and change.

SOCI 6060. Sociology of Education. 3 hours.
Mainstream and critical theories of how society shapes the purposes, processes, and organization of schools; current policy issues and sources of national education data, with primary focus on United States elementary and secondary schools.

SOCI 6090. Social Change. 3 hours.
The causes, nature, and consequences of changes in social structure and institutions.

SOCI 6150. Criminal Punishment and Society. 3 hours.
The relationship between contemporary American punishment and social organization and processes. Topics include historical features of, and justifications for, punishment; the death penalty debate; prisoner rights; and prison conditions.

SOCI 6160. Sociology of Development. 3 hours.
The political economy of global development and its impact on class, gender, race, and ethnicity; the application and relevance of theoretical and methodological paradigms. Topics include agriculture, urbanization, environment, education, health, migration, economic restructuring, and political and collective strategies.

SOCI 6190. Proseminar in Sociology. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
An introduction to the profession of sociology. Faculty members describe their intellectual work and discuss issues of professionalization, including selecting a major professor, preparing for comprehensive exams, writing for publication, and preparing for the job market.

SOCI 6220. Development of Sociological Theory. 3 hours.
Pivotal theories from classic theorists such as Marx, Weber, and Durkheim to the present.

SOCI 6230. Sociological Theory: The German Tradition. 3 hours.
The German theoretical tradition, beginning with Marx and continuing with Wilhelmine-era sociologists, particularly Simmel and Weber; the Weimar and Nazi periods; and postwar critical theorists, notably Habermas.

SOCI 6270. Personality and Social Structure. 3 hours.
The social factors that shape behavior and self-concept; theories such as behaviorism, symbolic interactionism, Freudian psychology, cognitive social psychology, and critical approaches. Topics include emotions, human development, and authenticity and sincerity in the postmodern age.

SOCI 6280. Sociology of Gender. 3 hours.
Feminist theories and methodologies on gender, with an emphasis on contemporary American society and the intersection of gender, race, and class. Topics include socialization, sexual orientation, reproduction, violence, family and household, work and global restructuring, and politics.

SOCI(AFAM) 6370. Sociology of Race and Ethnicity. 3 hours.
The relationships of racial and ethnic groups with each other and with social institutions and processes.

SOCI 6410. Current Trends in Sociological Theory. 3 hours.
The concepts of community, authority, rank, the sacred, and alienation to examine conflict and consensus, modernity and postmodernity, classical theory, and the

problem of meaning. The role of ideas in social integration and change, the problem of legitimation, civil religion in politics, "postmodern" society, and symbolism and moral order.

SOCI 6420. Structured Inequality. 3 hours.
Social stratification in the United States. The perception of class distinctions; prestige and power; the criteria of status evaluation; and the consequences of class for social relationships, lifestyles, and personality development.

SOCI(ANTH) 6450. Sociopolitical Ecology. 3 hours.
The relationship between humans and the environment; ecological and social theories about environmental policies and problems.

SOCI 6470. Deviance and Social Control. 3 hours.
Theories and research on the nature of deviant behavior and its control by social institutions, agencies, and groups.

SOCI 6490. Studies in Microsociology. 3 hours.
Research and theoretical perspectives on how humans are affected by social structures and how they create the structures that shape and direct behavior. Particular emphasis on symbolic interactionism. Perception, identity, socialization, deviance and social control, power and inequality, and the linkage between microscopic and macroscopic levels of analysis.

SOCI 6500. Sociology of the Political Economy. 3 hours.
The balance of political power between classes, races, and nations, as it shapes the economic forces that determine social order and the success or failure of social change.

SOCI 6600. Research Methods. 3 hours.
Sociological research methods. Topics include conceptions of research, the philosophy of science, formal and grounded theory construction, and qualitative and quantitative approaches to research design.

SOCI 6620. Analysis and Interpretation of Sociological Data I. 3 hours.
Univariate, bivariate, and multivariate analyses of nonexperimental quantitative evidence. Topics include frequency distributions, central tendency and dispersion, cross tabulation, mean difference analyses, statistical inference, regression, and the use of microcomputers and statistical software to conduct quantitative data analysis.

SOCI 6630. Analysis and Interpretation of Sociological Data II. 3 hours.
Prerequisite: SOCI 6620 or permission of department.
Multivariate data analysis; the design and execution of an independent research project using such techniques.

SOCI 6700. Survey Research Methods. 3 hours.
The procedures, methods, and problems of survey data collection. Topics include the historical development of survey research; sources of error in surveys; sampling; formatting questionnaires and interviews; and interviewing techniques.

SOCI 6750. Qualitative Methods of Social Research. 3 hours.
Prerequisite: SOCI 6600 or permission of department.
Qualitative approaches to research, with an emphasis on participant observation, intensive interviews, and analysis of text. Students must complete a major fieldwork project.

SOCI 6800. Sociology of Work and Industry. 3 hours.
Theories and research on work, industry, and organizations. Topics include the impact of organizations and workplaces on employees; models of management and control; and recent transformations in work and work organizations.

SOCI 6810. Sociology of Crime. 3 hours.
The nature, extent, and correlates of crime; theories of criminal behavior and victimization.

SOCI 6830. Sociology of Law. 3 hours.
The nature of law, and the ways the legal system reflects its broader social context.

SOCI 6850. Sociology of Occupations. 3 hours.
Occupational choice, socialization, careers, and professionalization; contemporary issues concerning women and work, minorities and work, the consequences of bureaucratic and technological changes, and the impact of work on non-work behavior.

SOCI 6900. Demographic Techniques. 3 hours.
Prerequisite: SOCI 6620 or permission of department.
Introduction to the mathematical techniques commonly used to measure population characteristics and changes in fertility, mortality, and migration.

SOCI 6950. Sociology of Organizations. 3 hours.
The impact of organizational structure on the lives and attitudes of employees; centralization, control, power, and accountability in workplaces; the role of gender in organizations.

SOCI 7000. Master's Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

SOCI 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

SOCI 8000. Special Topics in Sociology. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Theory and research on advanced topics selected by the student.

SOCI 8010. Seminar in Culture. 3 hours.
Approaches to culture, including the critical traditions of Frankfurt and Birmingham; the Durkheimian tradition of collective memory and social integration; and interactionist emphases on cultural products and structuration.

SOCI 8200. Seminar in Sociological Theory and Research. 1-3 hours. Repeatable for maximum 9 hours credit.
Selected topics on theory and research.

SOCI 8230. Seminar in Critical Theory. 3 hours.
Critical social theory from its origins in Germany in the 1920s to its present development in Europe and the United States. Includes Frankfurt theorists such as Horkheimer, Marcuse, and Adorno; second-generation Frankfurters, especially Habermas; and contemporary critical theories of identity, culture, justice, and politics.

SOCI 8280. Seminar in Gender Stratification. 3 hours.
Prerequisite: SOCI 6280 or WMST 7010 or permission of department.
Research and theories of gender equality and inequality in America and other cultures. Topics include gender stratification in public and private domains, and the intersection of gender with race, ethnicity, social class, and sexual orientation.

SOCI 8500. Seminar in Political Sociology. 3 hours.
Issues of class, gender, and race. Topics include power and state formation; competing paradigms of state action; the relationship between the state and economy; collective action; democratization, legitimacy and revolution.

SOCI 8510. Seminar in Organizations and Social Control. 3 hours.
Prerequisite: SOCI 6470 or SOCI 6800 or SOCI 6950.
Organizational processes that control behavior, including work performance, career development, and off-job attitudes, orientations, and behaviors.

SOCI 8630. Empirical Model-Building in Social Research. 3 hours.
Prerequisite: SOCI 6630 or STAT 6220 or permission of department.
Simultaneous equations and confirmatory factor methods to evaluate structural and measurement models. Emphasis on the interplay between theory and the construction and evaluation of empirical models.

SOCI 8730. Theories of Social Psychology. 3 hours.
Major classic and contemporary theories, including Freudian theory, exchange theory, dramaturgy, phenomenology, and ethnomethodology.

SOCI 8820. Communities and Crime. 3 hours.
Urban crime and spatial variation in crime rates. The impact of crime on the structure of communities and its role in neighborhood decline.

SOCI 8830. Violence and Society. 3 hours.
Theory and research on the relationship between criminal violence and social structures and processes.

SOCI 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

SOCI 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Speech Communication

Jerold L. Hale, *Head*
Bonnie J. Dow, *Graduate Coordinator,*
542-3253
(Terrell Hall)

The department offers programs leading to the MA and PhD degrees. PhD candidates select either an interpersonal communication track or a rhetoric track.

During their first year of study, students in the rhetoric track take SPCM 8200 and SPCM 8010 (1 hr.) in the fall semester and SPCM 8300 in the spring. Students in the interpersonal track take SPCM 8500 and SPCM 8010 (1 hr.) in the fall semester and SPCM 8700 in the spring semester. Additional requirements for PhD candidates include: (1) research skills, (2) competence in two areas within communication, (3) three hours of SPCM 8050, taken during the first four semesters in the program, (4) comprehensive examinations, and (5) dissertation. Requirements for the MA in speech communication include: (1) SPCM 8200, SPCM 8500, SPCM 8010 (1 hr.), and SPCM 8020 (1 hr.) in the fall semester and either SPCM 8300 or SPCM 8500 in the spring semester of the first year of study (2) two hours of SPCM 8050, one per semester, (3) thesis, and (4) final oral examination on both the program of study and the thesis.

SPCM 4310/6310. Communication Strategies in Government. 3 hours.
Undergraduate prerequisite: SPCM 3300 or permission of department.
Communication strategies and activities in the executive and legislative branches of local, state, and national government. Case study approach incorporated into the class.

SPCM 4340/6340. Communication and Religion. 3 hours.
The nature and practice of communication in a variety of religious traditions. Notions of sacred symbolism, myth, revelation, hermeneutics, and apologetics are especially emphasized.

SPCM 4370/6370. Women and United States Public Discourse. 3 hours.
Undergraduate prerequisite: SPCM 3300 or permission of department.
History and criticism of speeches by United States women in nineteenth- and twentieth-century social reform movements, especially woman's rights and feminism.

SPCM(HPRB) 4610/6610. Health Communication. 3 hours.
Communication about health with physicians and other providers, within support groups and health care organizations, and by public figures, groups, and organizations.

SPCM(AFAM) 4830/6830. African American Relational Communication. 3 hours.
Undergraduate prerequisite or corequisite: SPCM 1500 or SPCM 3700 or AFAM 2000 or PSYC(AFAM) 2150 or AFAM(PSYC) 3150.
Interpersonal communication within African American relationships from a holistic framework. Historical, sociological, and psychological factors that affect individual behaviors within these relationships, including gender socialization from Africa to America.

SPCM(AFAM) 4840/6840. African American Family Communication. 3 hours.
Undergraduate prerequisite or corequisite: SPCM 3700 or AFAM 2000 or PSYC(AFAM) 2150 or AFAM(PSYC) 3150.
This course provides students with an opportunity to examine communication within the African American family from an African-centered perspective. It requires students to read and critically examine various theoretical and methodological approaches to the African American family.

SPCM 6320. Political Campaign Communication. 3 hours.
The role communication plays in deciding which candidates will run for office, the nomination of candidates, and the election of candidates to office.

SPCM 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for master's degree under the direction of faculty members.

SPCM 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

SPCM 7500. Seminar in Communication Training and Development. 3 hours.
Prerequisite: Graduate standing.
Practicum of communication training and development. Relevant theory and research and the opportunity to participate in and present extended training and development programs. Topics include needs assessment, design and presentation of training programs, proposal writing, multi-media skill development, and follow-up evaluation of program effectiveness.

SPCM 8010. Seminar in Communication Education. 1-3 hours. Repeatable for maximum 6 hours credit. 0-2 hours lecture and 2 hours lab per week.
Teaching speech communication in postsecondary institutions, including communication training in organizations. Learner variables, such as communication apprehension, sociolinguistic diversity, and motivations for adult learning. Instructional strategies, including evaluation, technology use, and curriculum organization. Projects in analysis of instructional discourse and evaluation of learning outcomes.

SPCM 8020. Introduction to Graduate Study in Speech Communication. 1 hour.
Introduction to graduate studies in the field of speech communication.

SPCM 8050. Research Practicum in Communication. 1 hour. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research apprenticeship conducted under faculty supervision.

SPCM 8200. Seminar in Rhetorical Theory. 3 hours.
Rhetorical theory in classical, modern, and contemporary times.

SPCM 8210. Seminar in Classical Rhetorical Theory. 3 hours.
Rhetorical thought in the Graeco-Roman world, from the older Sophists to St. Augustine.

SPCM 8220. Seminar in Argumentation. 3 hours.
Examines argument from a rhetorical perspective focusing on reasoning as it occurs in a variety of public settings.

SPCM 8230. Contemporary Rhetorical Theory. 3 hours.
Influential twentieth-century scholarship in rhetorical theory, emphasizing a communication orientation.

SPCM 8240. Legal Communication. 3 hours.
Communication issues and skills which affect lawyers, judges, litigants, and jurors in criminal and civil justice. Particular attention is given to a survey of research related to verbal and nonverbal communication as applied to legal interviewing, negotiation, pretrial tactics, and litigation.

SPCM 8250. Critical Theories of Discourse. 3 hours.
The development of twentieth-century theories about the nature of human social discourse. Contributions of structuralism, speech act theory, social structural theories, and/or post-structural theories to contemporary understandings of human communication on a social scale.

SPCM 8300. Seminar in Rhetorical Criticism. 3 hours.
Analysis, evaluation, and practice of approaches to rhetorical criticism of public discourse.

SPCM 8310. Topics in Public Address. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: (SPCM 8200 and SPCM 8300) or permission of department.
Research, analysis, and evaluation of selected topics of public address.

SPCM 8330. Topics in Rhetorical Theory. 3 hours. Repeatable for maximum 9 hours credit.
Specific areas of research of rhetorical theory from various eras. May focus on an author (e.g., Kenneth Burke, Michel Foucault, or St. Augustine) or a subject area (e.g., rhetoric and social change or rhetoric and culture or stylistics).

SPCM 8340. Methodologies of Rhetorical Criticism. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: (SPCM 8200 and SPCM 8300) or permission of department.
A particular approach to rhetorical criticism, such as feminist criticism, Burkean criticism, or cross-cultural criticism.

SPCM 8350. The Rhetoric of Science. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite or corequisite: (SPCM 8200 and SPCM 8300) or permission of department.
Critical and theoretical study of scientific communication in public settings. Students may examine the intellectual and cultural roots of modern science, science's social and institutional characteristics, persuasive aspects of scientific inquiry and scientific social movements, and specific topical areas such as evolutionary biology, genetics, medicine, and ecology.

SPCM 8360. Feminist Theory and Criticism. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite or corequisite: (SPCM 8200 and SPCM 8300) or permission of department.
History, purposes, assumptions, and analytical and evaluative tools of feminist theory and criticism as they relate to various forms of public discourse, including rhetoric, film, television, and other forms of popular culture.

SPCM 8500. Seminar in Interpersonal Communication Theory. 3 hours.
Prerequisite: Permission of department.
Theories of interpersonal communication. Familiarizes students with the breadth, scope, and range of communication theories. Develops skills in theory development, hypothesis formation, and model building. Provides skills necessary to read and evaluate scholarly publications in speech communication.

SPCM 8510. Seminar in Nonverbal Communication. 3 hours.
Empirical and theoretical research that focuses on the major communicative functions of nonverbal behavior and cues. Particular emphasis is placed on research projects that focus on the impression management functions of nonverbal communication. Students examine contemporary impression management efforts in politics, the courtroom, and related contexts.

SPCM 8520. Seminar In Communication and Social Influence. 3 hours.
Familiarizes students with issues related to communication and social influence. Parameters of social influence, theories of social influence that emphasize communication processes, source and audience characteristics, message and channel properties, and attitudinal outcomes.

SPCM(LING) 8530. Language and Communication Behavior. 3 hours.
Surveys linguistic aspects of human interaction. Examines language patterns such as orality, intensity, immediacy, and power. Analyzes conversational data as well as language structures in public messages.

SPCM 8540. Relational Communication. 3 hours.
Issues and research related to communication in personal relationships. Issues and studies related to attraction, relational development, relational maintenance and repair, critical events in relationships, and relational termination.

SPCM 8550. Advanced Topics in Interpersonal Communication. 3 hours. Repeatable for maximum 9 hours credit.
A readings and research seminar in theoretical topics of interpersonal communication. Areas of study will vary depending on the timelines of the topics and the research focus of the professor. Sample topics include communication in relational development and interpersonal communication competencies.

SPCM 8610. Seminar in Health Communication. 3 hours.
The multiple discourses and processes involved in communication about health. Advanced analysis of theories and research involved in the processes of naming, blaming, and shaming.

SPCM 8700. Social Scientific Research Methods In Speech Communication. 3 hours.
Topics covered include formalizing research questions, conceptual definitions, operational definitions, measurement, hypothesis testing, sampling, research designs, and computer assisted data analysis.

SPCM 8800. Seminar in Intercultural Communication. 3 hours.
The study of communication within and between diverse cultural groups. Examines communicative nature of social identity, effects of world view on communication, nonverbal and verbal codes, varying relational patterns, and rhetoric situated in varying cultures. An applied research project will be conducted.

SPCM 8990. Directed Study and Special Topics in Speech Communication. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Individual directed study or research in selected areas of speech communication conducted under the supervision of a faculty member.

SPCM 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

SPCM 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Statistics

Ishwarasa V. Basawa, *Acting Head*
Robert L. Taylor, *Graduate Coordinator,*
542-5232
(Statistics Building)

The Department of Statistics offers a Master of Science (MS) degree in statistics, a Doctor of Philosophy (PhD) degree in statistics, and a Master of Applied Mathematical Science (MAMS) degree. The MS degree has two options, one in applied statistics and the other in mathematical statistics. In both options, preparation of an MS thesis is optional. The thesis option requires a minimum of 27 semester hours of graduate credit exclusive of thesis and the nonthesis option requires a minimum of 33 semester hours. The PhD degree requires basic core course work equivalent to the mathematical statistics option of the MS degree plus work in advanced probability and inference; otherwise, the student can select advanced course work according to his own special interests.

Graduate students in the department may expect to have assignments that include teaching, applied research and consulting experience in addition to their course work and the basic research experience involved in completing their dissertation. The department maintains over 160 PCís in a Novell environment, along with twenty Sun workstations connected to an Enterprise class Sun fileserver. Two student labs contain both PCís and Sun workstations. A four-processor Sun server dedicated to statistical computation provides resources for very large databases and complex analyses.

Courses in advanced calculus and linear algebra are required as prerequisites for all graduate students in statistics.

STAT 4070/6070. Probability and Statistics for Secondary Teachers. 3 hours. 2 hours lecture and 1 hour lab per week.
Undergraduate prerequisite: STAT 2000.
Sampling and statistical studies; basic probability; random variables and their distributions; exploring data using graphical techniques and numerical summaries; exploring relationships between two variables: chi-sq. test of independence; correlation, linear regression; confidence intervals and hypothesis testing for means and proportions. Group projects and activities illustrating concepts will be utilized.

STAT 4100/6100. Applied Stochastic Processes. 3 hours.
Not open to students with credit in STAT 4720/6720 or STAT 8700.
Undergraduate prerequisite: MATH 2500.
Stochastic processes including discrete, continuous and conditional probability concepts. Definitions and properties of stochastic processes. Markov processes and chains, basic properties, transition matrices and steady state properties. Reliability renewal and queueing processes, expected waiting times, single and multiserver queues.

STAT 4230/6230. Applied Regression Analysis. 3 hours.
Undergraduate prerequisite: STAT 4210 or STAT 6220 or permission of department.
Applied methods in regression analysis. Topics include univariate linear regression, techniques of multiple regression and model building, ANOVA as regression analysis, analysis of covariance, model selection and diagnostic checking techniques, nonlinear regression, and logistic regression.

STAT 4240/6240. Sampling and Survey Methods. 3 hours.
Undergraduate prerequisite: STAT 4210 or STAT 6210.
Design of finite population sample surveys. Stratified, systematic, and multistage cluster sampling designs. Sampling with probability proportional to size. Auxiliary variables, ratio and regression estimators, nonresponse bias.

STAT 4260/6260. Statistical Quality Assurance. 3 hours.
Undergraduate prerequisite: STAT 4210 or STAT 6220.
Basic graphical techniques and control charts. Experimentation in quality assurance. Sampling issues. Other topics include process capability studies, error analysis, SPRT, estimation and reliability.

STAT 4270/6270. Least Squares Methods. 3 hours.
Undergraduate prerequisite: STAT 4210 and MATH 2500.
Least squares techniques using matrices. Techniques of matrix algebra and calculus applied to regression and experimental designs.

STAT 4280/6280. Applied Time Series Analysis. 3 hours.
Undergraduate prerequisite: STAT 4510/6510.
Autoregressive, moving average, autoregressive-moving average, and integrated autoregressive-moving average processes, seasonal models, autocorrelation function, estimation, model checking, forecasting, spectrum, spectral estimators.

STAT 4290/6290. Nonparametric Methods. 3 hours.
Undergraduate prerequisite: STAT 4210 or STAT 6220.
Techniques and applications of nonparametric statistical methods, estimates, confidence intervals, one sample tests, two sample tests, several sample tests, tests of fit, nonparametric analysis of variance, correlation tests, chi-square test of independence and homogeneity, sample size determination for some nonparametric tests.

STAT 4360/6360. Statistical Programming in SAS. 3 hours.
Undergraduate prerequisite: STAT 4210 or STAT 4230/6230 or STAT 6220.
Statistical programming techniques, data manipulation, and presentation of analyses using SAS software package.

STAT 4380/6380. Survival Analysis. 3 hours.
Undergraduate prerequisite: [(STAT 4210 or STAT 6220) and STAT 4510/6510] or permission of department.
Methods for comparing time-to-event data, including univariate parametric and nonparametric procedures, regression models, diagnostics, group comparisons, and use of relevant statistical computing packages.

STAT 4510/6510. Mathematical Statistics I. 3 hours.
Undergraduate prerequisite: MATH 2500.
Concepts and basic properties of some special probability distributions, independence, moment generating

functions, sampling distributions of statistics, limiting distributions.

STAT 4520/6520. Mathematical Statistics II. 3 hours.
Undergraduate prerequisite: STAT 4510/6510.
Methods and properties of point estimation, confidence intervals, minimum variance unbiased estimators, hypothesis testing, analysis of variance, linear regression.

STAT 4630/6630. Statistical Methods in Bioinformatics I. 3 hours.
Graduate prerequisite: STAT 4210 or STAT 6220.
Methods for analysis of DNA sequence data, with an emphasis on the probabilistic basis of the methods. Topics include analysis of single DNA sequences, sequences alignment, BLAST searches, and related topics, as well as relevant topics from probability theory.

STAT 4640/6640. Statistical Methods in Bioinformatics II. 3 hours.
Graduate prerequisite: STAT 4630/6630.
Further development of methods for analysis of DNA sequencedata. Topics include sequence comparisons, DNA databasesearches, evolutionary models, phylogenetic tree constructionand related topics, as well as relevant topics from probabilitytheory.

STAT 4710/6710. Introduction to Probability Theory I. 3 hours.
Undergraduate prerequisite: MATH 2500.
Probability axioms, combinatorial analysis, random variables, univariate and multivariate distributions, expectations, conditional distributions, independence, and laws of large numbers.

STAT 4720/6720. Introduction to Probability Theory II. 3 hours.
Undergraduate prerequisite: STAT 4710/6710.
Central limit theorems, random walks, Markov chains and processes, Brownian motion, branching and renewal processes, diffusion processes and queueing processes and applications.

STAT 6200. Introductory Biostatistics I. 3 hours.
Not open to students with credit in STAT 6210 or STAT 6310.
Introductory statistics with applications to medical and biological problems. Topics to be covered include biostatisticaldesign in health research, data collection and management, and introductory concepts and methods of statistical data analysis.

STAT 6210. Statistical Methods I. 3 hours.
Statistical models, descriptive statistics, random variables, probability distributions, concepts in statistical inference, estimation, confidence intervals, hypothesis testing, goodness-of-fit tests, contingency tables.

STAT 6220. Statistical Methods II. 3 hours.
Prerequisite: STAT 6210.
Regression analysis including simple linear regression, multiple regression, model checking and analysis of residuals, correlation and prediction, analysis of variance, completely randomized designs, randomized block designs, factorial designs, interaction and covariance analysis.

STAT 6310. Statistical Analysis I. 3 hours.
Prerequisite: Permission of department.
Statistical analysis, including principles of sampling and descriptive statistics, elementary probability and discrete random variables, normal distribution, sampling distributions, statistical inference and hypothesis testing for one and two samples, simple linear regression, basic nonparametrics, chi-squared tests.

STAT 6320. Statistical Analysis II. 3 hours.
Prerequisite: STAT 6310 or permission of department.
Statistical analysis, including multiple regression, model building and selection, regression diagnostics, nonlinear regression, completely randomized designs, randomized block designs, factorial designs, general linear models, analysis of covariance, split plot designs, repeated measures analyses, and use of relevant statistical computing packages.

STAT 6800. Tools for Statistical Theory. 3 hours.
Prerequisite: (MATH 2500 and MATH 3000 and STAT 4510/6510) or permission of department.
Statistical logic and proofs, convergence, expectations, and matrix manipulations. Topics of this course are chosen to strengthen beginning statistics graduate students' analytical skills.

STAT 6810. Probability Distributions. 3 hours.
Prerequisite: Permission of department.
Probability laws, distribution functions and expectations, random variables and statistical distributions, joint distributions and conditional expectations, order statistics, Markov chains, Poisson process, Brownian motion, renewal theory, queueing theory.

STAT 6820. Statistical Inference. 3 hours.
Prerequisite: STAT 6810.
Principles of data reduction, completeness, ancillarity. Point estimation; methods of estimation. Evaluation of estimators; C-R lower bound, efficiency, hypothesis testing: N-P tests, UMP tests, interval estimation; coverage probabilities and confidence sets.

STAT 7000. Master's Research. 1-9 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

STAT 7100. Technical Report. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
For use with the professional master's degree in the Applied Mathematical Sciences.

STAT 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

STAT 7700. Internship in Statistics. 3-15 hours. Repeatable for maximum 15 hours credit.
Supervised practicum in a government agency or industry site.

STAT 7770. Graduate Assistantship Teaching in Statistics. 1-5 hours. Repeatable for maximum 60 hours credit.
Prerequisite: Permission of department.
Provides graduate teaching assistants with knowledge of pedagogical approaches and available support systems for teaching statistics courses. Special sections are reserved for international students, with focus on use of language, pedagogy, and cultural aspects of teaching in this country.

STAT 8000. Supervised Statistical Consulting. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: STAT 8260.
Statistical consulting skills needed to deal with clients, formulate statistical models, explain analyses, use standard statistical computer packages, and write reports in language understandable to the client.

STAT 8040. Environmental Statistics. 3 hours.
Prerequisite: STAT 4210 or STAT 6220 or STAT 6320.
Methods for sampling the environment and subsequent analysis of resulting data are considered. Emphasis is placed on design-based analysis and spatial data analysis. Special topics include environmental variables, environmental toxicology, and long-term trend detection.

STAT 8060. Computing Techniques in Statistics I. 3 hours.
Prerequisite: STAT 4510/6510 and STAT 6220.
Algorithms for computer generation of discrete and continuous univariate and multivariate random variates. Finite population sampling algorithms. Poisson processes. Variance reduction techniques. Analysis of simulated data.

STAT 8070. Computing Techniques in Statistics II. 3 hours.
Prerequisite: STAT 8060.
A continuation of Computing Techniques in Statistics I. Resampling methods. Markov-chain simulation techniques. Numerical integration. Optimization techniques. Data augmentation methods. Selected topics in advanced statistical computation.

STAT 8090. Statistical Analysis of Genetic Data. 3 hours.
Prerequisite: (STAT 4210 or STAT 6220) and STAT 4510/6510.
Common statistical and genetic models appropriate for analyzing genetic data, especially DNA sequence data. Emphasis on fitting models, estimating parameters, and making inferences based on genetic data.

STAT 8170. Probability Theory I. 3 hours.
Prerequisite: MATH 4100/6100 or STAT 6800.
Measurable spaces and measures, Lebesgue-Stieljes measure, independence, almost sure and in probability convergence, integration in probability spaces, product measures, absolute continuity of measures, weak law of large numbers, strong law of large numbers, weak convergence.

STAT 8180. Probability Theory II. 3 hours.
Prerequisite: STAT 8170.
Central limit theorem and Lindeberg-Feller theorem, stable laws, infinitely divisible laws, conditional expectations, Martingales, almost sure convergence for martingales, uniform integability, Markov chains, Brownian motion, Skorokhod's representation and Donsker's theorem.

STAT 8200. Design of Experiments for Research Workers. 3 hours.
Prerequisite: STAT 4210 or STAT 6220 or STAT 6320.
Methods for constructing and analyzing designed experiments are considered. Concepts of experimental unit, randomization, blocking, replication, and orthogonal contrasts are introduced. Designs include completely randomized design, randomized complete block design, Latin squares design, split-plot design, repeated measures design, and factorial and fractional factorial designs.

STAT 8210. Multivariate: Theory and Methods. 3 hours.
Prerequisite: STAT 6320.
Relevant matrix theory, multivariate random vectors, exact and asymptotic distributions, multivariate normal distribution (MVN), Q-Q plots, sampling from MVN and inference for population mean vector, covariance matrix, correlation matrix, MANOVA, principal component analysis, factor analysis, discriminant analysis and classification and clustering.

STAT 8220. Clinical Trials. 3 hours.
Prerequisite: STAT 6320.
Drug development and NDA approval procedures; randomization; blindness; phase I-IV clinical trials; multicenter trials; bioequivalency; sample size determination; design and analysis; cross-over design; repeated measurements design; survival analysis; meta analysis.

STAT 8230. Applied Nonlinear Regression. 3 hours.
Prerequisite: STAT 6220 or STAT 6320.
Statistical modeling using nonlinear regression is considered. Topics include fixed-effects nonlinear regression models, nonlinear least squares, computational methods and practical matters, growth models, and compartmental models. Nonlinear mixed-effects models are discussed, including model interpretation, estimation and inference. Examples will be drawn from forestry, pharmaceutical sciences, and other fields.

STAT 8240. Sampling and Related Topics. 3 hours.
Prerequisite: STAT 4240/6240 and STAT 6820.
Prerequisite or corequisite: STAT 8210 and STAT 8260.
Recent development in model-based estimation in survey sampling. A super population approach to inference on finite population quantities will be taken. Both Bayesian and classical approaches to sampling and related applications including small area estimation will be emphasized.

STAT 8250. Multivariate Methods. 3 hours.
Prerequisite: STAT 6220.
The relevant matrix theory, multivariate random vectors and their distributions, multivariate normal distribution (MVN), sampling from MVN and inference for population mean vector, covariance matrix, correlation matrix, multivariate ANOVA, principal component analysis, factor analysis, discriminant analysis and classification.

STAT 8260. Theory of Linear Models. 3 hours.
Prerequisite or corequisite: STAT 6820 and STAT 8210.
The Gauss-Markov model is introduced. Topics include estimability, parameter estimation, analysis of variance, hypothesis testing, restricted models, reparameterization, two-part model, correlated data, and fixed, mixed and random effects models.

STAT 8270. Spatial Statistics. 3 hours.
Prerequisite: STAT 4520/6520 and STAT 8260.
Theoretical foundations of spatial statistics, models for spatial data, and methods for model fitting, statistical inference, and spatial prediction are considered. Analysis of lattice data, images, continuous spatial variation and spatial point patterns.

STAT 8280. Time Series Analysis. 3 hours.
Prerequisite: STAT 4520/6520 or STAT 6820.
Linear processes, autoregressive-moving average models, predication, parameter estimation, model fitting and testing.

STAT 8290. Advances in Experimental Designs. 3 hours.
Prerequisite: STAT 8260.
Historical and recent advances in experimental design are considered. Designs including factorial, fractional factorial, central composite, incomplete block, cyclic, row-column, and simplex are discussed. Response surface and mixture models are considered. Optimal designs for linear and nonlinear models are developed.

STAT 8300. Multivariate Analysis. 3 hours.
Prerequisite: STAT 6820 and STAT 8210.
Selected topics in the theory of multivariate analysis at an advanced level.

STAT 8330. Advanced Applications and Computing. 3 hours.
Prerequisite: STAT 8200.
Basics of S programming language, objects in S+, graphics in S+, smoothing techniques and data summaries, linear models, generalized linear models, modern nonlinear regression techniques, multivariate statistics, survival analysis.

STAT 8530. Advanced Statistical Inference I. 3 hours.
Prerequisite: STAT 6820.
Prerequisite or corequisite: STAT 8170.
Exponential families; more on sufficiency, completeness, ancillarity, and UMVUE; C-R lower bound and Fisher information for single and multiparameter cases; equivariance; large sample theory; likelihood estimation and asymptotic efficiency.

STAT 8540. Advanced Statistical Inference II. 3 hours.
Prerequisite: STAT 8530.
Theory of uniformly most powerful tests, unbiased tests, and invariant tests, maximin tests, confidence sets, asymptotic theory for standard large sample likelihood based tests, theory of linear rank tests.

STAT 8550. Asymptotic Inference. 3 hours.
Prerequisite: STAT 8540.
Local asymptotic normality and its applications; M-estimation; minimum distance methods; robust inference; quasilikelihood and applications to generalized linear models; kernel density estimation; adaptive estimators and tests with applications to proportional hazard models.

STAT 8560. Advanced Theory of Nonparametric Statistics. 3 hours.
Prerequisite: STAT 8540.
Nonparametric estimation and hypothesis testing, relative efficiency, exchangeable random variables, ranking and distribution free statistics, generalized U-Statistics, generalized linear rank statistics, limiting distributions of certain nonparametric statistics, density estimation and related topics.

STAT 8570. Statistical Decision Theory. 3 hours.
Prerequisite: STAT 8530.
Essential elements of decision theory, game theoretic approach, minimax theorem, Bayesian Inference and decision rules, admissibility and minimaxity results, minimax estimation of normal and Poisson means, multiple decision problems, gamma-minimaxity.

STAT 8600. Ranking and Selection: Theory and Methods. 3 hours.
Prerequisite: STAT 4520/6520 or STAT 6820.
Selecting the best populations and treatments; indifference zone and subset selection approaches; multiple comparisons; nonparametric selection; bayesian selection; estimation of ordered parameters.

STAT 8620. Advanced Statistical Applications I. 3 hours.
Prerequisite: STAT 6320 and STAT 6820.
Review of standard discrete distributions and generating functions, two-way and higher-dimensional contingency tables, chi-squared and other goodness-of-fit tests, binary response models, log-linear models, multinomial response models, introduction to generalized linear models.

STAT 8630. Advanced Statistical Applications II. 3 hours.
Prerequisite: STAT 8260 and STAT 8620.
Theoretical foundations for the generalized linear model are introduced. Applications to Gaussian, binary, polytomous, and counts data are considered. Topics include hierarchical model building, estimation algorithms, analysis of deviance, and diagnostics. Extensions include overdispersed data, mixed generalized linear models, longitudinal data, and spatial data.

STAT 8650. Bootstrapping Techniques. 3 hours.
Prerequisite: STAT 8530.
The jacknife and bootstrap, bootstrap confidence intervals, prepivoting, asymptotic validity and invalidity, bootstrap accuracy and Edgeworth expansions, bootstrap for regression and autoregression, bootstrapping Markov chain models, moving block bootstrap for general weakly dependent data.

STAT 8700. Applied Stochastic Processes. 3 hours.
Prerequisite: STAT 4720/6720.
Discrete time Markov chains, continuous time Markov chains, queueing processes, renewal processes, Markov random fields, point processes, Brownian motion and diffusion.

STAT 8730. Sequential Analysis. 3 hours.
Prerequisite: STAT 6820.
Prerequisite or corequisite: STAT 8170 and STAT 8530.
Stopping times, optional stopping theorem, Anscombe's theorem, renewal theorem and associated results, SPRT for simple and composite hypotheses, nonlinear renewal theory, sequential point and interval estimation. In addition to these topics, current results from the literature will be presented.

STAT 8900. Special Topics in Statistics. 3 hours. Repeatable for maximum 27 hours credit.
Prerequisite: Permission of department.
Selected topics concerning recent developments in statistics.

STAT 8910. Statistical Seminar. 1-3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Seminar topics in statistics.

STAT 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

STAT 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Women's Studies

Patricia Miller, *Director*
Mary Carruth, *Graduate Coordinator,* 542-2846
(1200 S. Lumpkin Street)

Please see the Index for information on the certificate program in women's studies. The courses having a women's studies prefix are listed below.

WMST 4010/6010. Introduction to Feminist Theories. 3 hours.
Undergraduate prerequisite or corequisite: WMST 1110-1110D or WMST 1110H or WMST 2010 or WMST 2010H or permission of department.
The historical origins, philosophical assumptions, and political implications of contemporary feminist theories, including conservative, liberal, radical and ecological feminist theories.

WMST 4050/6050. Gender and the Political Economy of Development. 3 hours.
Not open to students with credit in WMST 7050.
Prerequisite: WMST 4010/6010 or permission of department.
Conceptual and methodological tools of analysis to gender and development issues in Third World societies of Africa, Asia, Latin America, and the Caribbean. Use of case studies to explore similarities in gender-related experiences and strategies of resistance and empowerment.

WMST 4120/6120. Biology and Politics of Women's Reproduction. 3 hours.
Undergraduate prerequisite: (WMST 4010/6010 and BIOL 1103-1103L) or permission of department.
Women's reproductive life cycles from the perspective of evolutionary biology and the political theory of radical feminism. Topics include puberty, sexual cycling, menarche, pregnancy, childbirth, and menopause. Feminist critiques of science are explored.

WMST 4130/6130. Border Women: Postcolonialism, Gender, and Identity. 3 hours.
Undergraduate prerequisite: WMST 4010/6010 or permission of department.
Gender construction and identity formation in multicultural, postcolonial societies using theories from the social sciences and humanities. Experiences of women of color and Third World women from, for example, the Indian sub-continent, Hawaii, and Chicana United States. Topics include processes of marginalization, strategies of resistance, and transformation of oppressive power relations.

WMST 4250/6250. Special Topics in Women's Studies. 3 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: WMST 4010/6010 or permission of department.
Ongoing and current topics of scholarly interest in women's studies.

WMST 7060. Black Women's Narratives. 3 hours.
Prerequisite: WMST 4010/6010 or permission of department.
Theoretical and methodological issues in the study and use of black women's narratives. The course also focuses on how gender, ethnicity, culture, class, and sociohistorical context are reflected in various kinds of narrative texts.

WMST 7070. Feminist Ethnography. 3 hours.
Prerequisite: WMST 4010/6010 or permission of department.
Ethnographic research and writing and how it is shaped by gender, race, class, and other markers of social difference. Issues of identity politics, power relationships, ethical dilemmas, and representational strategies will be explored. Students will engage in critical reading of classic and contemporary ethnographies and term projects entailing qualitative methods.

WMST 7100. Lesbian and Gay Studies. 3 hours.
Prerequisite: WMST 4010/6010 or permission of department.
Investigation of same-sex desire, heterosexuality, homosexuality, and the regulation of sexual identities across different racial/ethnic and class/regional communities. Focusing on Native American, African American, Latino, Asian American, and international studies, with texts from law, anthropology, history, film, fiction, and theory.

WMST 7950. Directed Research in Women's Studies. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: WMST 4010/6010 and permission of department.
Readings and independent research closely supervised by a faculty member on a specified interdisciplinary topic in women's studies.

WMST 8010. Women and the Construction of Knowledge. 3 hours.
Not open to students with credit in WMST 7010.
Prerequisite: WMST 4010/6010 or permission of department.
Women's approaches to thinking, learning, and the production of knowledge; inclusiveness of academic disciplines to women's lives and experiences; the question of whether distinct feminist methods exist within academic disciplines; and women's status as participants in disciplines and universities.

WMST 8020. Seminar in Advanced Feminist Theory. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: WMST 4010/6010 or permission of department.
Seminar covering topics of scholarly interest in advanced feminist theory.

The C. Herman and Mary Virginia Terry College of Business

P. George Benson, *Dean*
Melvin R. Crask, Director, *MBA Program,* 542-5671
(Brooks Hall)

Nine graduate degree programs are offered by the Terry College of Business: the Master of Business Administration, Master of Accountancy, Master of Internet Technology, Master of Marketing Research, Master of Arts in business administration and in economics, Master of Applied Mathematical Science, and Doctor of Philosophy in business administration and in economics. The MBA, MAcc, MIT and MMR degrees lead to professional and managerial careers. The MA programs are used for intensive specialization or as a path to the PhD. The PhD programs lead to research and/or teaching careers.

The accelerated eleven-month MBA and MMR programs admit students in the summer only. The two-year MBA program admits students in the fall only. All other programs in the Terry College of Business admit students each semester.

MBA

The Terry MBA program offers a traditional two-year option for candidates with undergraduate degrees from any major, as well as an accelerated eleven-month option for candidates with an undergraduate business degree from an AACSB international accredited institution.

The program's objectives are:

1. To provide a basic analytical tool kit for management, including fundamental concepts and principles from the various management disciplines, and an understanding of the major institutions in business and government.
2. To develop skill in using these tools in an imaginative, orderly, problem-solving capacity.
3. To advance the ability to make and carry out decisions.
4. To develop a basis for dealing effectively with others, in person and in writing.
5. To encourage continuous learning from experience.
6. To instill a thorough understanding of today's economic, political, and social environment as it relates to business.

The first year consists of core course work. These courses introduce tools, concepts, and techniques for managerial decision making in the basic areas of business. Courses include accounting, finance, production management, information systems, ethics, statistics, economics, legal environment of business, marketing, leadership, negotiations, and management strategy. The second year consists of sequence and elective course work and MBA P.L.U.S.

The eleven-month MBA consists of three consecutive semesters of course work. Core courses are taken during the summer term. During the rest of the year, the student takes sequence courses, electives, and participation in MBA P.L.U.S.

Each student must take at least six hours in two areas of specialization. Six electives are available to gain additional breadth or depth in the concentration. Please refer to the MBA brochure for additional program information.

MMR

The MMR program prepares students for professional careers in marketing research and marketing intelligence. Students entering this selective program usually have degrees in business or marketing, although entrance is available to students in other majors who meet a set of five prerequisite business courses. Criteria for admission include: GMAT score, GPA, work experience or internships, references, and a personal interview. The program involves 12 months of coursework followed by a six-month paid internship. For a brochure and application packet contact the MMR website at http://www.cba.uga.edu/mmr/.

MAcc

The MAcc program is designed to prepare students for professional careers in financial accounting, public sector accounting, auditing, managerial accounting and controllership, information systems, or taxation. Students usually enter this program after having earned a baccalaureate degree. However, the currently enrolled accounting majors at the University of Georgia may enter the Five-Year Program at the beginning of the senior year, in which case the student will earn both a baccalaureate and master's degree.

MIT

The two-semester Master of Internet Technology (MIT) Program is designed to produce graduates capable of working in the rapidly growing fields of electronic commerce and internet development as designers, software developers, and/or managers. The skills needed to conceive, develop and deploy Web-based e-commerce sites are inherently multidisciplinary in nature. Creating such sites requires a knowledge of internet protocols, interface design, database management, programming languages, electronic commerce marketing and management strategies and more.

Students are required to complete 32 semester hours of coursework with 14 hours of required courses in two constituent areas: Computer Science and MIS, plus a course in internet design and production in the New Media Institute. Nine hours of graduate electives are taken from a variety of departments on campus to provide depth in a particular area or breadth in several areas.

The remaining six semester hours involve a project in which students work in teams to develop an internet-based solution for a client. Projects are done for actual businesses and organizations to solve an actual problem or leverage the internet to expand business opportunities.

Refer to the MIT program web site, ezbiz.terry.uga.edu, for the most current information and details about the program.

MA

The MA programs enable students to secure a working knowledge in business administration or economics. After satisfying undergraduate foundation requirements, the student, counseled by a major professor, designs a program of at least 24 semester hours built around a research field. The thesis and course work represent an integrated program of study. Master of Arts programs are offered in economics, finance, management, management sciences, real estate, and risk management and insurance.

PhD

The PhD programs provide a background for careers in government, business, academia, and research. The doctoral program is individually planned for each student by the major professor and advisory committee. There is no foreign language requirement. Students in the PhD in Business Administration develop a high level of competency in a major field of business, a minor field, and a research methodology. In addition, all students must have knowledge of mathematics through differential and integral calculus. Programs leading to the PhD in Business Administration are offered in:

Accounting
Business Finance
Management Information Systems
Management Sciences
Marketing
Human Resource Management
Production/Operations Management
Real Estate
Risk Management and Insurance
Strategic Management

The PhD in Economics is offered with emphasis on microeconomic theory, macroeconomic theory, and two of the following fields:

Financial Economics
Econometrics

Economic Development
Economic History
Industrial Organization
International Economics
Labor Economics
Monetary Economics
Public Finance
Productivity Analysis

Accounting

Silvia A. Madeo, *Director*
Paul A. Copley, *Graduate Coordinator, (MAcc),* 542-3619
Jennifer J. Gaver, *Graduate Coordinator, (PhD),* 542-3699
(Brooks Hall)

ACCT 5030/7030. Advanced Financial Accounting. 3 hours.
Application of accounting theory to complex business entities, including accounting for equity investments, business combinations, and international operations. Accounting for not-for-profit organizations. The preparation of consolidated financial statements, including the use of electronic spreadsheets.

ACCT 5100/7100. Managerial Accounting I. 3 hours.
Undergraduate prerequisite: ACCT 1130H or ACCT 2102.
The design of accounting systems to serve the internal needs of management with an emphasis on underlying theory. Product costing, including activity-based costing; budgeting and other planning applications, information for decision making, planning and control application for decentralized organizations.

ACCT 5200/7200. Auditing, Risk Assessment, and Control. 3 hours.
Undergraduate prerequisite: ACCT 5010.
Prerequisite or corequisite: ACCT 5310/7310.
Assurance services with focus on the audit of financial statements. The basic financial statement audit process is discussed including the concepts of evidence, materiality, and risk. The role of professional ethics and legal liability in the auditing profession.

ACCT 5310/7310. Systems I. 3 hours.
Undergraduate prerequisite: ACCT 1130H or ACCT 2102.
Accounting information systems (AIS), including the role of such systems in an organization, electronic data processing, AIS applications, AIS analysis and design, AIS controls, and the audit of AIS.

ACCT 5400/7400. Taxation I. 3 hours.
Undergraduate prerequisite: ACCT 1130H or ACCT 2102.
A basic federal income tax course covering concepts of taxation applicable to all taxable entities but primarily relating to individuals. Introduces research approaches to tax problems as well as methods of analysis most appropriate to taxation issues.

ACCT 5410/7410. Taxation II. 3 hours.
Undergraduate prerequisite: ACCT 5400/7400.
The federal taxation of business entities and owners, primarily focusing on corporations and shareholders. The tax provisions governing business entities, as well as the impact of those provisions on business decisions and choice of entity form.

ACCT 5800/7800. Internship/Cooperative Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: Permission of department.
Applied professional experience or experience with the profession in another culture.

ACCT 7420. Partnership Taxation. 3 hours.
Prerequisite: ACCT 5400/7400.
The fundamental tax and legal concepts involved in the income taxation of partnerships and partners.

ACCT 7430. Estate and Gift Taxations. 3 hours.
Prerequisite: ACCT 5400/7400.
The structure and fundamental concepts involved in estate and gift taxation and the income taxation of estates and trusts. Personal financial planning concepts are also introduced.

ACCT 7435. Cross-Jurisdictional Taxation. 1.5 hours.
Prerequisite: ACCT 5400/7400.
In-depth coverage of the cross-jurisdictional taxation area, including coverage of international, state, and local tax issues.

ACCT 7440. Corporate Tax I. 3 hours.
Not open to students with credit in ACCT 5410/7410.
Prerequisite: ACCT 5400/7400.
The federal taxation of business entities and owners, primarily focusing on corporations and shareholders, for students planning to pursue a concentration in taxation.

ACCT 7730. Tax Policy and Research. 3 hours.
Prerequisite: ACCT 5400/7400 and permission of department.

Development of tax research tools and the development of an understanding of tax policy issues as they arise in social policy and professional accounting settings.

ACCT 7740. Accounting Policy and Research. 3 hours.
Prerequisite: ACCT 5200/7200 and permission of department.
Development of accounting research tools and an understanding of accounting policy issues as they arise in social policy and professional accounting settings.

ACCT 7990. Financial Accounting. 3 hours.
Concepts of accounting, the basic structure of financial statements, the interpretation of corporate annual reports and limitations of such reports.

ACCT 8000. Financial and Managerial Accounting. 3 hours.
Not open to students with credit in ACCT 7990.
Prerequisite: Permission of department.
Concepts of accounting, the basic structure of financial statements, the interpretation of corporate annual reports and basic concepts related to the internal use of accounting information.

ACCT 8050. Financial Statement Analysis. 3 hours.
Prerequisite: ACCT 2101 or ACCT 7990.
Basic techniques, research methods, strengths, and limitations of financial statement analysis. Computer analysis of financial data to predict earnings and other financial ratios. Use of these techniques to value equity securities and to predict takeover targets, future debt ratings, and bankruptcies.

ACCT 8100. Managerial Accounting II. 3 hours.
Prerequisite: ACCT 5100/7100.
Advanced cost and managerial accounting topics. Application of cost and managerial accounting techniques to "real world" problems.

ACCT 8140. Internal Uses of Accounting Information. 2-3 hours.
Prerequisite: ACCT 7990.
Basic concepts and techniques applicable to the internal uses of accounting information. Emphasis is placed on planning and control applications, but some attention is given to product costing issues.

ACCT 8150. Survey of Accounting. 1.5 hours.
Prerequisite: Permission of department.
Financial and managerial accounting for students with prior accounting course work or experience. Basic accounting concepts, techniques pertinent to understanding corporate financial statements and techniques applicable to the use of accounting information for planning and controlling business operations.

ACCT 8200. Audit II. 3 hours.
Prerequisite: ACCT 5200/7200 and ACCT 5310/7310.
Advanced auditing topics with emphasis placed on the practical aspects of auditing financial statement transaction cycles and account balances. Students will complete a practice case, including the drafting of the audit report.

ACCT 8300. Electronic Commerce Security and Control. 3 hours.
Comprehension and communication of current electronic commerce applications. Topics include the business decisions required to implement, plan, and secure an electronic commerce application. Information security controls and system integrity issues are discussed in depth. Regulatory issues, Internet standards, system architecture, and payment methods are covered.

ACCT 8490. Tax Implications of Business Decisions. 3 hours.
Prerequisite: ACCT 8140 or ACCT 8150.
The major provisions of the federal income tax law that impact management decisions in all types of business entities.

ACCT 8700. Special Topics in Accounting. 3 hours.
Prerequisite: Permission of department.
Advanced topics of current interest in auditing, financial accounting, managerial accounting, systems, or taxation.

ACCT 8990. Directed Study in Accounting. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Directed study or research in the area of accounting.

ACCT 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ACCT 9010. Accounting Workshop. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Critical examination and development of research projects of departmental faculty, doctoral students, and visiting scholars.

ACCT 9030. Documentation and Presentation of Accounting Research Results. 1 hour.
Prerequisite: Permission of department.
Publication issues related to accounting research.

ACCT 9100. Behavioral Accounting Research. 3 hours.
Prerequisite: Permission of department.

Judgement and decision-making research in accounting and auditing, including the roles of experience, cognitive processes, group processes, and decision aids.

ACCT 9110. Positive Accounting Research. 3 hours.
Prerequisite: Permission of department.
The use of accounting information in contracts, the associated incentives for earnings management, and other related topics.

ACCT 9120. Capital Markets Research in Accounting. 3 hours.
Prerequisite: Permission of department.
The information content of accounting information as reflected in changes in security prices and trading volume in financial markets, and other related topics.

ACCT 9130. Special Topics in Accounting Research. 3 hours.
Prerequisite: Permission of department.
Contemporary topics in accounting research.

ACCT 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Banking and Finance

Annette B. Poulsen, *Head*
James S. Linck, *Graduate Coordinator,*
542-3646
(Brooks Hall)

Banking and Finance

FINA 4280/6280. Small Business Finance. 3 hours.
Undergraduate prerequisite: FINA 3000 and MSIT 3000.
Undergraduate prerequisite or corequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
Principles of small business finance and the raising and management of venture capital, financial planning, forecasting, capital budgeting, working capital management, and sources of capital. This course is aimed at students planning careers in either small business management or in small business consulting.

FINA 4810/6810. International Finance. 3 hours.
Undergraduate prerequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
International business decision making emphasizing the effects of internationalized financial and nonfinancial markets. Exchange rate analysis, hedged costs of funds, economic exposure and management, capital budgeting, financial and corporate strategy, and the evaluation of international risks and returns.

(FINA)AAEC 4870/6870. Futures and Option Markets. 3 hours.
Undergraduate prerequisite: AAEC 2580 or ECON 2106.
Development, functions, and importance of futures and option markets. Futures and option contracts; issues such as speculation, the roles of commission houses, commodity exchanges, and clearinghouses; and the use of future contracts as instruments for financing business activities. Technical and fundamental trading theories.

FINA 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

FINA 8000. Financial Management. 3 hours.
Not open to students with credit in FINA 8010.
Intensive analysis of financial decision-making in the firm, emphasizing both investment and financing decisions. Analytical tools of finance are introduced. Valuation concepts, risk-return analysis, project valuation, capital structure, and corporate financing.

FINA 8010. Financial Management. 1.5 hours.
Not open to students with credit in FINA 8000.
Financial decision-making in the firm, emphasizing both investment and financing decisions. Analytical tools of finance are introduced. Valuation concepts, risk-return analysis, project valuation, capital structure, and corporate financing.

FINA 8050. Financial Analysis. 3 hours.
Prerequisite: FINA 8000.
Application of basic principles of finance to a number of management activities, including cost management decisions. Topics include financial forecasting with an emphasis on cash flows and financial needs, valuation of ongoing business operations, evaluating production alternatives, cost accounting, and advanced topics in capital budgeting.

FINA 8100. Corporate Financial Management. 3 hours.
Tools and concepts in corporate finance. Students are required to analyze situations, make value maximizing decisions, and communicate the basis of those decisions. Financial analysis and planning, capital budgeting, evaluation of financing alternatives, company

valuation, dividend policy, mergers, and capital structure decisions.

FINA 8110. Theory of Corporate Finance. 1.5 hours.
Important theoretical contributions in corporate finance and the empirical tests of those theories. A framework is developed for understanding a broad range of important corporate financial decisions. Substantial emphasis is placed on the determinants of corporate financing and payout policies.

FINA 8140. Mergers, Restructuring, and Corporate Control. 1.5 hours.
The dynamics of control within corporations and the role of the market for corporate control in leading to economic restructuring and shifts in resource allocation by corporations. Mergers and acquisitions, asset sales, restructuring, leverage buyouts, and bankruptcy.

FINA 8150. Using Financial Markets. 3 hours.
Prerequisite: FINA 8000.
Using financial markets in corporate decision making. Topics will vary but may include short-term financial planning, risk management, managerial compensation, and corporate restructuring.

FINA 8160. Venture Capital Financing. 1.5 hours.
Venture capital in financing entrepreneurial growth companies. How venture capital is raised, invested, and then harvested for reinvestment. How professional venture capitalists analyze and structure potential investments. How and when portfolio companies should execute initial public offerings.

FINA 8300. Investments. 3 hours.
Financial assets and markets including the efficient markets hypothesis. The role of risk in asset pricing, the implications of asset pricing models, the capital asset pricing model, the arbitrage pricing model, and theories of valuation for both stocks and fixed income securities.

FINA 8310. Advanced Speculative Markets. 1.5 hours.
The economics of financial futures and options markets. Advanced theory of hedging with speculative financial instruments.

FINA 8340. Portfolio Management. 1.5 hours.
Prerequisite: FINA 8300.
The active management of portfolios consisting of domestic and international securities. The estimation of portfolio inputs, the construction of desirable portfolios, and the evaluation of portfolio performance. Selected cases are analyzed by the students.

FINA 8360. Financial Engineering. 1.5 hours.
Prerequisite: FINA 8300 and FINA 8310.
The use of derivative securities to achieve financial goals. Specific cases involve the use of derivatives and other financial innovations to reduce risk, lower the cost of financing, improve portfolio yields, or help the corporate firm achieve strategic goals. Students analyze, present, and critique cases.

FINA 8430. Financial Markets. 1.5 hours.
The evolving roles of financial intermediaries, regulation, and capital markets in the financing of American businesses and the provision of savings and payments mechanisms for individuals. The securitization of traditional loan products and the determinants of the term structure of interest rates.

FINA 8450. Management of Financial Institutions. 1.5 hours.
Measurement and management of risk in financial services firms. Management of risks associated with interest rates, credit, liquidity, and exchange rates. Attention is devoted to commercial banks, pension funds, investment banks, and other firms. A financial institution decision game is typically included in the course.

FINA 8810. International Financial Management. 3 hours.
International business decision making with an emphasis on the relationship between decisions and markets. The determinants of exchange rates, hedged costs of funds, transaction and economic exposure management, capital budgeting, corporate strategy, and swaps. The course makes extensive use of cases.

FINA 8990. Directed Study in Finance. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
The most recent professional contributions in the various special fields of finance. Student and instructor interests determine which particular field is brought under scrutiny.

FINA 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

FINA 9100. Mathematical Finance. 3 hours.
Prerequisite or corequisite: ECON 8910 or permission of department.
Selected tools from continuous time finance and fundamental concepts in the analysis of stochastic processes. These tools are applied to the pricing of derivative securities—especially forward, futures, and option contracts. Binomial and finite difference approximations to continuous time processes are also used to price derivatives.

FINA 9110. Valuation and Capital Market Theory. 3 hours.
Prerequisite: FINA 9100 and ECON 8010 and ECON 8070.
Prerequisite or corequisite: ECON 8080.
Theory emphasizing valuation and capital markets. A mathematical development of the major asset pricing theories: the capital asset pricing model (CAPM), arbitrage pricing theory, the pricing of contingent claims, and the intertemporal CAPM. Related topics include expected utility maximization, mean-variance analysis, and efficient markets.

FINA 9120. Empirical Research in Corporate Finance. 3 hours.
Prerequisite: FINA 9100 and ECON 8000 and ECON 8010 and ECON 8070.
Prerequisite or corequisite: FINA 9110.
Empirical research in corporate finance. The modern theories of capital structure, dividend policy, corporate control, investment banking, and capital budgeting, emerging areas of research such as market microstructure, venture capital financing, and comparative international corporate finance.

FINA 9130. Financial Research Methodology. 3 hours.
Prerequisite: FINA 9120 and ECON 8080.
The data bases and empirical methodologies used in performing financial research. Event study and regression methodologies in corporate finance research and investment-oriented methodologies such as factor and principal components analyses. Students gain experience in presentation of research and in refereeing papers.

FINA 9200. Corporate Finance Theory. 3 hours.
Prerequisite: Permission of department.
Theoretical constructs underlying corporate finance, illustrated with both theoretical seminal and current research. Theoretical topics will include optimization, non-cooperative game theory, information economics, and agency theory. Signaling, screening, incentive design, product market structure, research and development, security issuance, bankruptcy, and market microstructure.

FINA 9210. Empirical Research in Investments. 3 hours.
Prerequisite: Permission of department.
The markets, trading systems, and properties of financial securities. Includes an investigation of market efficiency and the time series properties of securities. Empirical studies of asset pricing models, portfolio performance, term structure models, and capital market integration.

FINA 9230. Research Topics in Finance. 3 hours.
Prerequisite: Permission of department.
Advanced topics in finance. The content is flexible with the material based on recent advances in finance. Possible course topics include “Financial Markets and Institutions” and “Game Theory with Applications to Finance and Economics.”

FINA 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Management Sciences and Information Technology

MSIT 7000. Master’s Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master’s degree under the direction of faculty members.

MSIT 7300. Master’s Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

MSIT 8000. Business Statistics. 1.5 hours.
Prerequisite: Permission of department.
Descriptive statistical measures, basic probability notions, estimation and hypothesis testing for the mean, proportion and variance in a population, linear regression models. Emphasis is on applications in a business environment. Computer is used throughout the course.

MSIT 8100. Applied Business Statistics. 2-3 hours.
Fundamental statistical tools and their use in business and economics. Goal of course is to ensure that students can select appropriate statistical tools and apply them correctly. Topics include sampling distributions, estimation, hypothesis testing, inferences on two populations, and simple and multiple regression.

MSIT 8130. Quantitative Analysis I. 3 hours.
Prerequisite: MSIT 8100.
The tools of quantitative analysis most frequently used in business, industry, and government. Spreadsheet modeling and applications in multiple regression, time series, forecasting, linear programming, network flows, and integer programming.

MSIT 8140. Quantitative Analysis II. 3 hours.
Prerequisite: MSIT 8130.
A continuation of Spreadsheet Modeling and Decision Analysis I. Spreadsheet modeling and applications in

service systems subject to randomness, reliability, risk analysis, simulation analysis, discriminant analysis, neural networks and artificial intelligence, multi-criteria decision analysis, and quality.

MSIT 8150. Applied Mathematical Programming. 3 hours.
Prerequisite: MSIT 8130 or permission of department.
Models, theory and algorithms of linear, integer, and nonlinear programming. Use of the Solver capability in Excel along with instruction in Visual Basic to create add-in capabilities. Applications from within the functional areas of business permeate the course.

MSIT 8160. Multiple Criteria Decison Making. 3 hours.
Prerequisite: MSIT 8150 or permission of department.
Analytic hierarchy process (United States school) vis-a-vis methods from the European school of discrete alternative multi-criteria decision analysis, multiple objective programming, interactive procedures, computation, and enchancements derived from the application of neural networks and genetic algorithms.

MSIT 8210. Simulation. 3 hours.
Prerequisite: MSIT 8100 or permission of department.
Simulation as a tool for model analysis. Topics include random number and random variate generation, techniques for modeling complex systems, simulation program design, validation, implementation, applications in business. Assignments will involve computer exercises.

MSIT 8220. Applied Stochastic Models. 3 hours.
Prerequisite: STAT 4710/6710 or permission of department.
Stochastic models in management science, Markov chains, birth and death processes, applications to queuing and inventory models, reliability and maintenance models.

MSIT 8250. Network Flow Optimization Models in Business. 3 hours.
Prerequisite: MSIT 8150 or permission of department.
Models, theory, and algorithms for solving network flow optimization problems are presented. Data structural design and computer implementation issues are discussed along with the widespread usage of network models in business and industry.

MSIT 8470. Artificial Intelligence and Expert Systems in Management Science. 3 hours.
Prerequisite: MSIT 8140.
Artificial intelligence and expert systems applied to problems in management science. Artificial intelligence, focusing on the design, testing, validation, and use of expert systems in management science applications. Knowledge-acquisition is also discussed. Computer-based projects are employed to reinforce concepts.

MSIT 8990. Directed Study in Management Science. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Students conduct field study projects or individually investigate newly-breaking areas in the management sciences under faculty direction.

MSIT 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

MSIT 9150. Special Topics in Management Science. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Various topics in neural networks, genetic algorithms, fuzzy sets and fuzzy logic, tabu search, data envelopment analysis, chaos theory, and simulated annealing.

MSIT 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Economics

William Lastrapes, *Head*
Christopher Cornwell, *Graduate Coordinator,*
542-3670
(Brooks Hall)

ECON 4100/6100. Monetary Economics. 3 hours.
Not open to students with credit in ECON 4030 or ECON 4030H.
Undergraduate prerequisite: ECON 4010 or ECON 4020.
Money and financial markets, emphasizing the evolution and economic rationale of money and financial institutions, determinants of the price level and interest rates, alternative monetary policies, and international monetary relations.

ECON 4300/6300. Public Sector Economics. 3 hours.
Undergraduate prerequisite: ECON 4010.
Government's economic role, with discussions of what governments should (or shouldn't) do, and of what they do in fact. Major tax and spending programs are

critically examined, and proposals for changing them are considered.

ECON 4350/6350. Industrial Economics. 3 hours.
Undergraduate prerequisite: ECON 4010.
Firms' performances and conduct toward rival firms, suppliers, and customers under different market structures, including perfect competition and monopoly. The rationale and consequences of antitrust regulation and other public policies.

ECON 4400/6400. Economics of Public and Regulated Enterprises. 3 hours.
Undergraduate prerequisite: ECON 4010.
The economic analysis of regulated and nationalized industries and organizations, with emphasis on the regulation of electric, natural gas, and telecommunications enterprises. Methods and implications of privatization of traditionally "public" enterprises are also considered.

ECON 4450/6450. Economic Analysis of Law. 3 hours.
Undergraduate prerequisite: ECON 4010.
An efficiency-based perspective on major areas of the law, including contract, tort, and nuisance law, which points to the reduction of transactions costs as unifying legal principle.

ECON 4500/6500. Monetary Policy. 3 hours.
Undergraduate prerequisite: ECON 4010 and ECON 4100.
Undergraduate prerequisite or corequisite: ECON 4010 and (ECON 4030 or ECON 4030H or ECON 4100).
The theory and practice of monetary policy, including discussions of rationales for government involvement in money and banking, actual central bank behavior, the choice of monetary rules versus discretion, and how alternative monetary regimes might work.

ECON 4550/6550. International Trade: Theory and Policy. 3 hours.
Undergraduate prerequisite: ECON 4010.
The determinants of world trade patterns, with discussions of immigration, capital mobility, inter-industry trade, transfer payments, and recent developments in international trade policy.

ECON 4600/6600. Labor Economics. 3 hours.
Undergraduate prerequisite: ECON 4010.
The application of microeconomics to the study of labor markets. The demand for and supply of labor, compensating wage differentials, human capital investment, alternative compensation policies, unions, discrimination, and unemployment.

ECON 4650/6650. Economics of Organizations and Management. 3 hours.
Undergraduate prerequisite: ECON 4010.
Decision making within firms and public organizations, using standard microeconomic tools. Transaction costs and the size of the firm, the compensation and motivation of workers, mergers and corporate control, team production, and the theory of bureaucracy.

ECON 4700/6700. Economic History of the United States. 3 hours.
Undergraduate prerequisite: ECON 4010.
Economic analysis is combined with historical narrative to explore the evolution of the United States' economy from its agrarian origins to its current status as an industrialized nation. Basic economic reasoning is used to explain the course, sources, and consequences of United States economic change, with particular emphasis on the twentieth century.

ECON(MARK) 4750/6750. Introduction to Econometrics. 3 hours.
Undergraduate prerequisite: ECON 4010 and (STAT 2000 or MSIT 3000).
Estimation and hypothesis-testing techniques using the linear regression model, with emphasis on the least-squares estimator and its performance under different statistical assumptions. A hands-on approach, stressing a wide range of empirical applications.

ECON 7000. Master's Research. 1-6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ECON 7300. Master's Thesis. 3-6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ECON 8000. Mathematical Analysis for Economists. 3 hours.
Mathematical methods and economic applications of selected topics in optimization theory, including comparative statistics analysis, duality and envelope results, inequality constraints and Kuhn-Tucker theory.

ECON 8010. Microeconomic Theory I. 3 hours.
The theory of consumer behavior, the analysis of production and cost, and the determination of output level and input mix of the profit-maximizing firm under perfect competition and monopoly.

ECON 8020. Microeconomic Theory II. 3 hours.
Prerequisite: ECON 8000 and ECON 8010.

Welfare economics, including the concepts of Pareto efficiency and consumer surplus and the analysis and measurement of welfare costs of public goods, externalities, and other "market failures."

ECON 8030. Microeconomic Theory III. 3 hours.
Prerequisite: ECON 8020.
The general equilibrium framework of microeconomics is developed and then extended to allow for the passage of time and the presence of uncertainty. Game-theoretic considerations are also considered.

ECON 8040. Macroeconomic Theory I. 3 hours.
Prerequisite: ECON 8000 and ECON 8010.
Theories of national income, unemployment, inflation, and interest and exchange rates. The implementation, and domestic and global repercussions, of alternative monetary and fiscal policies.

ECON 8050. Macroeconomic Theory II. 3 hours.
Prerequisite: ECON 8040.
Dynamic, stochastic models of macroeconomic behavior, including neoclassical and endogenous models of economic growth and New Classical and New Keynesian models of the business cycle.

ECON 8060. Macroeconomic Theory III. 3 hours.
Prerequisite: ECON 8050.
Macroeconomics, with emphasis on theory or applied time-series methods. Endogenous growth theory, real and New Keynesian business cycle theories, vector autoregression, long-memory processes, and multiple-equilibrium and heteroskedasticity models.

ECON 8070. Statistics for Econometrics. 3 hours.
The statistical foundations of econometrics, including probability, random variables, sampling, expectation, distribution functions, parametric and conditional distributions, independence, functions of random variables, and maximum likelihood.

ECON 8080. Introduction to Econometrics. 3 hours.
Prerequisite: ECON 8070.
Linear regression models, with special attention to estimator properties and hypothesis testing under various statistical assumptions. Least-squares, maximum likelihood, and method-of-moments estimation procedures and seemingly unrelated regressions and simultaneous equation models.

ECON 8090. Research Methods in Economics. 3 hours.
Prerequisite: ECON 8010 and ECON 8070 and ECON 8080.
Practical issues in conducting applied economic research. Topics include choosing dissertation/research topics; data sources and methods; presenting, publishing, and refereeing research papers and critical analysis of the literature. Students are required to write and present a research paper to the department in partial fulfillment of the course requirements.

ECON 8110. Econometrics I. 3 hours.
Prerequisite: ECON 8080.
Advanced econometric techniques, including full-information estimation of simultaneous equation models, generalized methods of moments estimation and specification testing, dynamic regression models, vector autoregressions, cointegration, and estimation and inference using panel data.

ECON 8120. Econometrics II. 3 hours.
Prerequisite: ECON 8110.
The theoretical properties of maximum likelihood estimators and their use in overcoming shortcomings of the classical linear model. Computer algorithms are developed and used to compute maximum-likelihood estimators for logit, probit, tobit, sample-selectivity, and failure time models.

ECON 8210. Industrial Economics I. 3 hours.
Prerequisite: ECON 8010.
The structure, conduct, and performance of suppliers and customers in product and geographic markets. Topics treated include recent industry studies, consequences of technological change, the role of property rights and transactions costs, and federal and state public utility and antitrust regulations.

ECON 8220. Industrial Economics II. 3 hours.
Prerequisite: ECON 8030.
Industrial economics, with emphasis on game-theoretic models of strategic behavior, contracting and agency theory, transaction costs, property rights, and the boundaries of the firm. Recent theoretical contributions are also covered, with empirical applications and illustrations.

ECON 8310. Public Economics I. 3 hours.
Prerequisite: ECON 8010.
Market failures involving public goods and externalities, and of methods for measuring and reducing their efficiency costs, together with analysis of taxation and income-redistribution policies and discussion of collective choice theories, including social choice and public choice paradigms.

ECON 8320. Public Economics II. 3 hours.
Prerequisite: ECON 8010.
The effects of taxes on economic decision making by individuals and businesses, with discussions of alternative tax systems, tax evasion and avoidance, social insurance programs, and issues in fiscal federalism.

ECON 8410. Labor Economics I. 3 hours.
Prerequisite: ECON 8010.

The neoclassical economic theory of the market and nonmarket allocation of individuals' time. Labor demand and supply, human capital investment, unions, discrimination, public sector labor markets, the distribution of earnings and income, and unemployment.

ECON 8420. Labor Economics II. 3 hours.
Prerequisite: ECON 8010.
Labor economics, with special emphasis on current theoretical and empirical issues. The demand for and supply of labor, compensating wage differentials, the structure of compensation, worker displacement, unemployment, and the distribution of labor-market income.

ECON 8510. International Economics I. 3 hours.
Prerequisite: ECON 8010.
A general equilibrium treatment of commodity and intra-industry trade, international capital mobility, and immigration, with treatments of alternative government policies including free trade, import tariffs and subsidies, export taxes and subsidies, quotas, and voluntary export restraints.

ECON 8520. International Economics II. 3 hours.
Prerequisite: ECON 8010.
Commodity-market imperfections and trade policy, including discussion of the implications of increasing returns to scale technology, commodity-trade restrictions, and the location of economic activities for international trade policy.

ECON 8610. Monetary Economics I. 3 hours.
Prerequisite: ECON 8040.
Monetary and banking theory, emphasizing the microfoundations of monetary exchange and bank intermediation, the determinants of money supply and demand, and the macroeconomic consequences of monetary shocks and bank failures.

ECON 8620. Monetary Economics II. 3 hours.
Prerequisite: ECON 8040.
The evolution and workings of commodity and flat-monetary regimes, with discussions of alternative regimes, discretionary central bank behavior, and externality, natural monopoly, and time-consistency issues in money and banking.

ECON 8710. Economic History. 3 hours.
Prerequisite: ECON 8040.
United States history through cliometrics, which applies economic theory and econometrics to historical data. The course draws on recent cliometric research as well as on more traditional studies of economic history.

ECON 8720. Topics in Economic History. 3 hours.
Prerequisite: ECON 8010.
Current research topics in historical economics, aimed at a deeper understanding of these topics and of modern cliometric techniques for examining them as demonstrated in recent scholarly writings. Topics will reflect student interests and current research trends.

ECON 8810. Economic Growth and Development. 3 hours.
Prerequisite: ECON 8040.
Exogenous and endogenous growth theories for market economies, addressing regional growth-rate differences, and of determinants of economic development including economic structures, environmental policies, and diet.

ECON 8820. The Analysis of Productivity. 3 hours.
Prerequisite: ECON 8010.
Analytical techniques for assessing the sources of and measuring changes in productivity, with microeconomic and macroeconomic empirical applications.

ECON 8850. Special Topics in Economics. 3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: ECON 8010.
Intensive study relating to a central theme of special interest in the field of Economics.

ECON 8900. Survey of Business Economics. 1.5 hours.
Prerequisite: Permission of department.
Theories of consumer and producer behavior and models of market structure, with discussions of the nature of the firm and various aspects of government and business relations. For one-year MBA students.

ECON 8910. Business Microeconomics. 3 hours.
Prerequisite: Permission of department.
Develops the fundamental microeconomic concepts of scarcity, opportunity cost, and marginal utility along with standard models of the firm. These concepts and models are then used to shed light on the structure and performance of actual firms, with emphasis on problems faced by real-world managers.

ECON 8920. Business Macroeconomics. 2 hours.
Prerequisite: Permission of department.
The historical behavior and determinants of aggregate economic statistics including gross domestic product, the unemployment rate, the inflation rate, interest rates and exchange rates. Models are developed to explain cyclical and long-term variations in these statistics; and fiscal and monetary policies for improving their performance.

ECON 8930. MBA Tutorial. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.

Reading and independent research on a specified topic beyond normal MBA course offerings and supervised by a faculty member.

ECON 8980. Economics Seminar. 1-3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Lectures on and discussion of some selected topic in applied or theoretical economics, with an emphasis on recent published and unpublished research.

ECON 8990. Directed Study. 3 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Students investigate a research problem in their special field of study under the personal direction of their major professor.

ECON 9000. Doctoral Research. 1-6 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ECON 9300. Doctoral Dissertation. 1-6 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Insurance, Legal Studies, and Real Estate

Robert E. Hoyt, *Head*
David W. Sommer, *Graduate Coordinator, Insurance,* 542-5160
James B. Kau, *Graduate Coordinator, Real Estate,* 542-9110
(Brooks Hall)

Risk Management and Insurance

RMIN 5530/7530. Advanced Property Insurance. 3 hours.
Undergraduate prerequisite: RMIN 5100 or permission of department.
Property risks facing businesses and the effective management of these risks with insurance. Practical application of property insurance to pure risk exposures, including direct and indirect property, inland marine, crime, boiler and machinery, and catastrophic property risks.

RMIN 5540/7540. Advanced Liability Insurance. 3 hours.
Undergraduate prerequisite: RMIN 5100 or permission of department.
Liability risks facing businesses and the effective management of these risks with insurance. Practical application of liability insurance to pure risk exposures, including motor vehicle liability, professional and general liability, environmental liability, employment practices and workers' compensation, and fiduciary liability.

RMIN 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

RMIN 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

RMIN 8100. Fundamentals of Risk Management. 1.5-3 hours.
Fundamentals of Risk Management and Insurance, with emphasis on risk financing through the use of insurance, retention, and non-insurance transfer agreements.

RMIN 8110. Employee Benefits. 1.5 hours.
The design, management, and financing of employee benefit plans. Topics include group life, group health, group disability, and retirement plans. Implications for employers and employees. Public and private approaches to provision of benefits. Regulatory and tax issues. Current topics in the field of employee benefits.

RMIN 8120. Corporate Risk Management. 3 hours.
Prerequisite: RMIN 8100.
The operational and financial risks faced by firms and the study of various methods of handling these risks, including loss prevention, risk retention, self-insurance, corporate insurance programs, and capital markets. Extensive use of cases.

RMIN 8990. Directed Study in Risk Management. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Directed study or research in risk management and insurance.

RMIN 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

RMIN 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

RMIN 9450. Property and Liability Insurance Seminar. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Selected topics in property and liability insurance. Special emphasis on academic research. Topics include loss reserves, adverse selection, insurer solvency, underwriting cycles, capital budgeting and property and liability insurance, property and liability rate regulation, and liability insurance issues.

RMIN 9550. Life and Health Insurance Seminar. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Selected topics in life and health insurance. Special emphasis on academic research. Topics include pensions, group health, moral hazard, demand for life insurance, industry structure and productivity, life insurance products and costs, disability insurance, and life insurer asset/liability management.

RMIN 9650. Risk Theory Seminar. 3 hours.
Prerequisite: Permission of department.
Risk theory and its applications including basic concepts of actuarial mathematics. Importance of utility theory and ruin theory to modeling of the insurance process is investigated. Application of probability and statistical techniques to the analysis of pure losses and loss distributions.

Legal Studies

LEGL 4300/6300. Law of Business Organizations. 3 hours.
Undergraduate prerequisite: LEGL 2700.
A managerial, entrepreneurial focus on the law applicable to forming partnerships, corporations and other business entities, raising capital and structuring relationships with agents, employees, partners, officers, and directors.

LEGL 4400/6400. Business Law. 3 hours.
Undergraduate prerequisite: LEGL 2700.
Debtor-creditor relations, commercial paper, contracts, securities, agency, partnership, joint ventures, corporations, professional and legal responsibility, sales, secured transactions, bankruptcy.

LEGL 4500/6500. Employment Law. 3 hours.
Laws prohibiting employment discrimination based on race, gender (including sexual harassment), religion, national origin, age, and disability, with an emphasis on avoiding unnecessary liability.

LEGL 8000. Legal and Regulatory Environment of Business. 2-3 hours.
The interrelationship of business and the ordering of society through law. Emphasizes why legal duties come to be placed on business and how managers appropriately respond to these duties.

LEGL 8050. Negotiation. 1.5-3 hours.
Concepts and tools of integrative, interest-based negotiation.

LEGL 8100. Law for Managers. 1.5 hours.
Prerequisite: LEGL 8000.
Antitrust, employment discrimination, products liability, environmental laws, securities fraud, and other current legal issues facing business managers.

LEGL 8200. Negotiation and Conflict Resolution. 1.5 hours.
Prerequisite: LEGL 8050.
Complex negotiation simulations and interest-based conflict management systems, with emphasis on methods of recognizing and resolving underlying conflicts and resulting disputes.

LEGL 8300. Legal Aspects of Financial Institutions. 1.5 hours.
Prerequisite: LEGL 8000.
Legal issues facing regulated financial institutions, such as banks and credit unions.

LEGL 8400. International Legal Transactions for Business. 1.5 hours.
Prerequisite: LEGL 8000.
Laws, agreements, and institutions that affect international business transactions with particular emphasis on licensing, exporting, contract formation, dispute resolution, intellectual property rights, and cultural, political, and ethical problems.

LEGL 8990. Directed Study in Legal Studies. 1-15 hours. Repeatable for maximum 15 hours credit.
Research in Legal Studies.

Real Estate

REAL 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

REAL 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

REAL 8070. Real Estate Development. 1.5 hours.
Development process with particular emphasis on analyzing the feasibility of design, location, and construction.

REAL 8800. Real Estate Analysis. 1.5 hours.
The basic principles of real estate law, markets, valuation, and finance. Designed for any graduate student with an interest in real estate decision making as well as a basis for more advanced courses.

REAL 8810. Real Estate Practice and Participants. 1.5 hours.
Prerequisite: REAL 8800.
Corequisite: REAL 9810.
Intended for real estate decision makers and managers in general. A series of seminars focusing on specific trends and challenges of contemporary real estate markets. The course is uniquely designed to expose students to the best practices in the industry as well as the managers implementing those practices.

REAL 8990. Directed Studies in Real Estate. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Directed study or research in real estate.

REAL 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

REAL 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

REAL 9810. Real Estate Investments. 1.5 hours.
Prerequisite: REAL 8800.
An intensive case-oriented course in the real estate decision making process. Special emphasis is placed on value maximization in investment analysis. Carefully selected topics address the process as well as the risk and rewards of real estate investment from a local market to an international perspective.

REAL 9830. Real Estate Finance. 1.5 hours.
Application of theoretical aspects of financial economics to explain real estate financial institutions and markets. Financial and economic methods are applied to residential and commercial real estate. Special topics include real estate in a portfolio, agency problems, and the influence of the legal environment.

REAL 9850. Real Estate Markets. 1.5 hours.
Concentration on real estate markets with specific emphasis on understanding the market forces affecting real estate at the urban and regional levels. The main focus will be on providing insight into the operation of urban land and non-residential markets and the process of urban growth and regional development.

REAL 9860. Real Estate Valuation. 1.5 hours.
Principles and techniques of appraising real estate with special emphasis on income producing real estate. The course provides an in-depth look at conventional valuation techniques in addition to modern valuation methods based on statistical inference. Special consideration is given to lease analysis and problems in applying the valuation techniques.

REAL 9870. Special Topics in Real Estate. 1.5 hours.
Advanced topics in real estate. Special emphasis on current issues in the real estate industry and the conceptual and analytical tools available for their analysis. The course is designed to provide practical experience through case analysis, site selection projects, and other forms of market analysis and research.

REAL 9910. Seminar in Real Estate Analysis and Finance. 1-6 hours. Repeatable for maximum 12 hours credit.
Selected topics in real estate analysis and finance. Topics include interest rate theory and mortgage financing, mortgage choice, secondary mortgage market, option theory, derivative assets, efficient market theory, default risk, mortgage insurance, agency problems, and risk management. Discussion of current research, proposal writing, and research methods.

REAL 9920. Seminar in Real Estate Markets and Investments. 1-6 hours. Repeatable for maximum 12 hours credit.
Selected topics in real estate market analysis, urban economics, and investments. Topics include real estate asset pricing, diversification, housing demand, information economics, agency theory, urban spatial structure, financial institutions, and urban public policy. Discussion of current research, proposal writing, and research methods.

Management

K. Roscoe Davis, *Head*
Ann K. Buchholtz, *Graduate Coordinator,*
542-9465
(Brooks Hall)

MGMT 7000. Master's Research. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

MGMT 7010. Developing Leadership Skills. 1-3 hours.
Leadership skills necessary for managerial work. Class activities are varied, including experiential exercises, discussions, case analyses, and collaborative learning. Activities focus on leadership skills, such as self-awareness, stress management, decision-making, feedback, listening, power and influence, motivation, empowerment, building effective teams, and self-leadership.

MGMT 7210. Materials Management. 3 hours.
Prerequisite: Permission of department.
Management of dependent and independent demand inventory items within a manufacturing environment and the examination of the management of finished good items within a distribution environment. Emphasis is placed on a systems perspective.

MGMT 7220. Project Management. 3 hours.
Prerequisite: Permission of department.
Planning, scheduling, organizing, implementing, and controlling of single and multiple projects. This course explores traditional and new techniques for the dynamic environment of project management.

MGMT 7230. Purchasing Management. 3 hours.
Prerequisite: Permission of department.
Purchasing and related functions (traffic, receiving, and surplus material). The relationships among price, quality, and delivery service. Japanese purchasing philosophy is contrasted to the United States philosophy in conjunction with techniques of negotiation, sourcing, value analysis, and engineering.

MGMT 7280. Simulation in Operations Management. 3 hours.
Prerequisite: Permission of department.
Network-based, discrete-event simulation in analyzing operations- based, business-related problems. Emphasis is on problem formulation, solution development, and analysis of output.

MGMT 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

MGMT 7400. Strategic Management. 3 hours.
Prerequisite: Permission of department.
Applied strategic management theory for business organizations in dynamic and competitive environments. Strategies for the analysis and development of conditions and resources likely to yield competitive advantage combined with the innovation, change, and behavior management imperatives necessary to sustain such competitive advantage.

MGMT 7410. Strategic Management in a Changing Environment. 3 hours.
Prerequisite: Permission of department.
Elements of strategy with principles of large-scale organizational change. Practical issues related to mental frameworks and human behavior, environmental and competitor analysis, competitive advantage for single- and multi-business firms, stakeholder analysis, and change implementation.

MGMT 7420. Business, Society, and Stakeholder Management. 3 hours.
Prerequisite: Permission of department.
The business and society relationship, including an analysis of corporate social performance. A strategic management and public policy perspective is employed in examining the relationship between business and key stakeholders, including governments, consumers, employees, community, and the natural environment.

MGMT 7440. Business and Corporate Strategy. 3 hours.
Prerequisite: Permission of department.
Issues, concepts, and tools for formulating business and corporate strategies that will enable organizations to achieve their goals and objectives effectively and efficiently. Key concepts include industry evaluation, resource-based strategy, sustainable competitive advantage, experience curve analysis, sensitivity analysis, and key success factor analysis.

MGMT 7460. Managing Change and Innovation. 1.5 hours.
Prerequisite: Permission of department.
Managing constant change inherent in modern business, whether driven by technological, environmental, or human innovations. Includes conceptual and theoretical perspectives, as well as practical applications of modern frameworks for managing change.

MGMT 7500. Entrepreneurship and New Venture Formation. 3 hours.
Prerequisite: Permission of department.
Contributions that new ventures and small businesses make to the economy and society as a whole; the characteristics of successful entrepreneurs; the process of starting up new businesses; and the primary determinants of new venture and small business performance.

MGMT 7510. Developing Successful Business Plans. 3 hours. 3 hours lab per week.
Prerequisite: Permission of department.
Key tasks involved in creating successful business plans and different ways in which each task may be accomplished. The primary course activity involves the preparation of a business plan for a "prospective" new venture.

MGMT 7530. Small Business Management. 3 hours.
Prerequisite: Permission of department.
Examines the special challenges facing small businesses in today's society. Integrates from a general management perspective the functional knowledge gained in the areas of finance, economics, human resource management, marketing, and operations in order to help prepare the student to manage such businesses.

MGMT 7560. International Strategic Management. 3 hours.
Prerequisite: Permission of department.
The formulation and implementation of integrated corporate strategy by multinational business organizations. The planning, direction, and control of the many flows linking the multinational company to its affiliates while operating within a plurality of political, economic, and sociocultural systems.

MGMT 7570. Global Management Strategy. 3 hours.
Prerequisite: Permission of department.
A study of how managers formulate and implement global management strategies and learn to manage key environmental factors, such as politics and culture. Focuses on strategic thinking with respect to the challenges implicit in managing the global corporation.

MGMT 7580. Management of Nonprofit Organizations. 3 hours.
Prerequisite: MGMT 3000 or permission of department.
Management of nonprofit organizations, from the entrepreneurship of start-up ventures to the evolving missions of established nonprofits. Specific attention is given to board roles, resource development, and fundraising, as well as to the history and legal basis of the nonprofit sector.

MGMT 7800. Organizational Diagnosis and Intervention. 3 hours.
Prerequisite: MGMT 7010.
Methods for gathering and assessing information about problems affecting the performance of the organization (diagnosis), as well as designing interventions to correct the problems.

MGMT 7810. Organizational Design and Development. 3 hours.
Prerequisite: MGMT 7010.
The formal and informal structures within an organization. Topics include designing organizational structures, jobs, teams, and work-flow processes; aligning the design of structures with organizational strategy; and assessing supporting relationships, such as decision-making and authority networks.

MGMT 8010. Integrated Resource Management I. 1.5 hours.
Not open to students with credit in MGMT 4000.
Traditional, total quality, just-in-time, and constraints management philosophies applied to services and manufacturing. Resource management is the integration of these philosophies and takes a systems perspective to long- and short-range planning, scheduling, executing, controlling, and measuring operations and related functions in providing effective business processes to achieve organizational goals. For one-year MBA students.

MGMT 8020. Integrated Resource Management II. 2-3 hours.
Not open to students with credit in MGMT 4000.
Traditional, total quality, just-in-time, and constraints management philosophies applied to services and manufacturing. Resource management is the integration of these philosophies and takes a systems perspective to long- and short-range planning, scheduling, executing, controlling, and measuring operations and related functions in providing effective business processes to achieve organizational goals. For two-year MBA students.

MGMT 8030. Designing, Managing, and Improving Supply Chains. 3 hours.
Prerequisite or corequisite: MGMT 8020.
Supply chain management, just-in-time, and total quality management philosophies are discussed, and organizational goals, strategies, strategic objectives, and performance measures are described. These topics provide the systems perspective for effective supply chains. Objectives are to provide the student the concepts and tools to design, manage, and improve the cross-functional links in supply chains.

MGMT 8240. Quality Management. 3 hours.
Prerequisite: Permission of department.

Managerial, behavioral, technological, and statistical concepts as related to Total Quality Management (TQM). Quality, continuous improvement, and productivity are discussed. Focus is on understanding and being able to apply all the concepts throughout any organization (e.g., service, manufacturing, not-for-profit, and governmental).

MGMT 8250. Productivity Management. 3 hours.
Not open to students with credit in MGMT 4250.
Prerequisite: Permission of department.
Advanced personal, process, white collar, and organizational productivity concepts, issues, and measurement systems. Process management concepts are applied to cross-functional activities in services and manufacturing. Constraint management tools for problem identification, solution, and implementation are applied to productivity problems.

MGMT 8260. Service Operations Management. 3 hours.
Not open to students with credit in MGMT 4260.
Prerequisite: Permission of department.
Operations management's role in service sector organizational performance. The concepts, skills, and research issues necessary to provide a competitive advantage to the service organization. Productivity improvement, quality of service delivery, work-force management, the impact of new technologies, and international issues.

MGMT 8270. Advanced Operations Management. 3 hours.
Not open to students with credit in MGMT 4260.
Prerequisite: MGMT 8250 or permission of department.
Process management, constraint management, just-in-time, quality management and traditional management tools applied to cross-functional problems based on case studies and/or actual organization projects from services and manufacturers. Technical analyses, presentations, and writing skills are utilized. Constraint management logic-based analytical processes provide the problem-solving methodology.

MGMT 8990. Directed Study. 1-9 hours. Repeatable for maximum 40 hours credit.
Prerequisite: Permission of department.
Directed study in management or MIS topics giving particular attention to specialized problems in an area related to a student's academic interests.

MGMT 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

MGMT 9010. Management Research Methodology. 3 hours.
Prerequisite: Permission of department.
The requirements that science places on management research. The importance of theory as a source of research questions, the role of constructs and variables, sampling, measurement, and the design of research to facilitate valid explanations of management phenomena.

MGMT 9020. Concepts of Organizations. 3 hours.
Prerequisite: Permission of department.
General exploration and analysis of the academic literature surrounding organizations.

MGMT 9030. Doctoral Research Seminar. 3 hours. Repeatable for maximum 9 hours credit.
Management research with particular emphasis on preparing students for research in different aspects of management.

MGMT 9280. Operations Management Research Seminar I. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Operations Management literature examining applicable research concepts, theories, and frameworks in the OM field.

MGMT 9290. Operations Management Research Seminar II. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Selected research topics focusing on providing an understanding of specific areas in the field of Operations Management (OM) and on identifying potential dissertation topics and areas for future research.

MGMT 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

MGMT 9400. Strategic Management Theory. 3 hours.
Prerequisite: Permission of department.
Evolution of major strategic management concepts and theories through in-depth discussions of the literatures which built the field's foundations. The benefits and limitations of key authors' contributions will be reviewed from the prospects of research, teaching, and management practice.

MGMT 9500. Strategic Management Research. 3 hours.
Prerequisite: Permission of department.

Research in the fields of strategic management, ethics/social responsibility, and entrepreneurship/small business. Includes a discussion of current "cutting edge" literature survey methods, model building and hypothesis generation, research designs, sample and site selection, data gathering methods, and quantitative and qualitative data analysis techniques.

MGMT 9810. Seminar in Human Resource Management. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Environments and functions of human resource management. The impact of the economic and institutional environments of human resource management, human resource planning, and human resource functions, such as recruitment, selection, development, compensation, and performance measurement. The course may also include emerging topics in human resource management.

MGMT 9820. Seminar in Organizational Behavior. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Classic and current theory and empirical research in organizational behavior. Individual differences, perception, job design, groups, leadership, power, motivation, organizational socialization, job satisfaction, organizational commitment, turnover, absenteeism, withdrawal behaviors, and individual performance. The course may also include emerging topics in organizational behavior.

Management Information Systems

Patrick G. McKeown, *Head*
Dale L. Goodhue, *Graduate Coordinator,*
542-3746
(Brooks Hall)

MIST 6080. Management Information Systems Overview. 1.5 hours.
Not open to students with credit in MGMT 6080.
The use of information systems technology by managers and professionals to improve organizational performance, group work, and personal productivity. Decision support software and database query systems are used to support a case-based approach to learning. For students in the one-year MBA program.

MIST 6090. Management Information Systems. 1-3 hours.
Not open to students with credit in MGMT 6090.
Use of information systems technology by managers and professionals to improve organizational performance, group work, and personal productivity. Decision support software and database query systems are used to support a case-based approach to learning. For students in the two-year MBA program.

MIST 7200. Team Development, Facilitation, and Technology. 1-3 hours.
Prerequisite: Permission of department.
With the increased emphasis on collaboration and teams, the ability to skillfully facilitate group interactions is one of the most important competencies for leading and managing. At the end of this course the student will have improved facilitative leadership skills, know how to effectively develop and use teams, and know how to successfully apply information technology to support teams. This course is also used to develop the permanent MBA learning teams.

MIST 7510. Database Management. 1.5 hours.
Not open to students with credit in MIST 7600.
This course provides a basic understanding of information management in organizations and specifically the design and use of database systems. Topics include data modeling, relational databases, structured query language, XML and Web access to databases. The course is divided into three sections: (1) information management concepts and procedures for Web-based systems; (2) data modeling and database design; (3) database implementation and web development.

MIST 7540. Networking Technology. 1.5 hours.
Not open to students with credit in MIST 7640.
This course provides a basic understanding of the technical aspects of business data communications and networking, with special emphasis on technologies used in the Internet. Students are presumed to have a general understanding of information technology and its applications. The course is divided into three parts: (1) basic data communications technologies; (2) network topologies and technologies; (3) network management and economics.

MIST 7550. Electronic Commerce. 3 hours.
Not open to students with credit in MIST 7650.
This course introduces the students to the general notion of electronic commerce and teaches them the management and marketing concepts and procedures that apply to electronic commerce. Specific topics will include principles of electronic commerce, attracting visitors, promotion, distribution, service, pricing, branding, advertising, consumer behavior, measuring effectiveness, societal effects, disintermediation, rein-

termediation, and strategy implementation. Case studies and projects are used extensively.

MIST 7590. Masters Of Internet Technology Project. 3 hours. Repeatable for maximum 15 hours credit. 3 hours lecture and 1-12 hours lab per week.
Prerequisite: MIST 7510 and MIST 7540.
Prerequisite or corequisite: MIST 7550.
Each project involves developing an electronic commerce application or equivalent Web site for a client. Students work in teams to complete the assignments and each team is expected to initiate, develop, and complete their project. The course may be taught by faculty from the constituent departments, and instruction on cutting edge topics in Web site design and Web development can be provided early in the course by the instructor or guest speakers. The project concludes with a working e-commerce Web site developed by the team.

MIST 7600. Organizational Memory Technology. 3 hours.
Not open to students with credit in MGMT 7600.
Issues and principles of managing organizational data. Concepts and skills for developing, accessing, and administering each technology. Extensive experience in developing data models, relational databases, and formulating and executing complex queries.

MIST 7620. Rapid Application Development. 3 hours.
Not open to students with credit in MGMT 7620.
Prerequisite: MIST 7600 or permission of department.
Use of rapid application development (RAD) techniques such as prototyping and end-user development for quickly creating information system applications.

MIST 7630. The Systems Approach. 3 hours.
Not open to students with credit in MGMT 7630.
The systems approach is a viewpoint that conceptualizes institutions as organized complexities, i.e., as organic (open) systems. Exemplified by the development of a general systems theory and cybernetics. The theories and findings of such interdisciplinary research to the study of human organizations.

MIST 7640. Networking Technology. 1.5 hours.
Not open to students with credit in MGMT 7640.
The application of data communications and networking technology to support the organizational information systems mission. Communication architectures and protocols, along with current commercial offerings, equipment, software, network design principles, and network management techniques.

MIST 7650. Electronic Commerce. 1.5 hours.
Not open to students with credit in MGMT 7650.
Electronic commerce and markets, including the use of the Internet and World Wide Web for commercial purposes. Development and management of websites and applications is covered in-depth.

MIST 7670. Information Resource Management. 3 hours.
Not open to students with credit in MGMT 7670.
Administering the Information System/Resource activities in an organization. Computer-based resources and IS development and consulting activities. Issues include management of IS professionals, user-professional relationships, management of IS project teams, tracking emerging technologies, and planning processes. A sociotechnical perspective is emphasized to insure a balanced look at technical and people issues.

MIST 7680. Globalization and Information Technology. 1-1.5 hours.
Prerequisite: MIST 6080 or MIST 6090.
The interrelationship between globalization and information technology. Technological and social factors supporting and inhibiting globalization. National culture. Managing a global IT project, the global IT manager, the global IT professional, working in culturally diverse IT teams, implementing IT projects in diverse cultures. Globalization and electronic commerce.

MIST 7730. Decision Support Systems. 3 hours.
Not open to students with credit in MGMT 7730.
The building of decision support systems. Topics include the DSS concept, applications, organizational issues, hardware and software technology, developmental methodology, data-model-user relationships, implementation strategies, and evaluation procedures.

MIST 7740. Knowledge-Based Systems in Business. 1.5 hours.
Not open to students with credit in MGMT 7740.
Prerequisite: MIST 7730 or permission of department.
Knowledge-based systems are a subset of artificial intelligence that deal with computer applications that replicate the decision- making and problem-solving skills of experts. Students learn how to identify, build, implement and manage knowledge-based systems.

MIST 7750. Executive Information Systems. 1.5 hours.
Not open to students with credit in MGMT 7750.
Prerequisite: MIST 7730 or permission of department.
This course provides the student with an understanding of executive information systems (EIS). An EIS supplies an organization's executives with the information needed to perform their job responsibilities. Concepts, development approaches, technologies, applications, and impacts.

MIST 7760. Group Support Systems. 1.5 hours.
Not open to students with credit in MGMT 7760.
Prerequisite: MIST 7730 or permission of department.
Collaborative computing, in particular group support systems (GSS), supports a group of people who work together on a common task. Concepts, development approaches, technologies, applications, and impacts.

MIST 7770. Data Warehouses and Mining. 1.5 hours.
Not open to students with credit in MGMT 7770.
Prerequisite: MIST 7730 or permission of department.
Data warehouses or large databases are used to support decision-making applications. Coverage includes concepts, development process, organizational issues, hardware, and software. The focus is on-line analytical processing (OLAP) and data mining to discover relationships in large databases.

MIST 7780. Advanced Decision Support in Business. 1.5-3 hours.
Not open to students with credit in MGMT 7780.
Prerequisite: MIST 7730 or permission of department.
Advanced topics in decision support and artificial intelligence. These include fourth generation languages, data warehousing, model building, model generation, and model management, data access, problem solving on novel computer architectures, fuzzy logic and sets, belief functions, neural computing and artificial intelligence, and intelligent agents.

MIST 7790. Advanced Artificial Intelligence in Business. 3-6 hours.
Not open to students with credit in MGMT 7790.
Prerequisite: MIST 7740 or permission of department.
Advanced topics in artificial intelligence. These include search reduction methods, such as genetic and Tabu Search algorithms, fifth generation languages, fuzzy logic and sets, belief functions, neural networks, and virtual reality.

MIST 8990. Directed Study. 1-9 hours. Repeatable for maximum 40 hours credit.
Prerequisite: Permission of department.
Directed study in management or management information systems topics, giving particular attention to specialized problems in an area related to a student's academic interests.

MIST 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

MIST 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

MIST 9700. Management Information Systems Research Seminar I. 3 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in MGMT 9700.
The management information systems (MIS) research literature. It explores applicable research theories and frameworks, research concepts, and exemplary MIS research.

MIST 9710. Management Information Systems Research Seminar II. 3 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in MGMT 9710.
Prerequisite: MIST 9700.
A continuation of the survey of management information systems (MIS) research literature focusing on MIS dissertation proposals and completed dissertations. Preparation, development, presentation, and defense of an MIS doctoral dissertation proposal.

Marketing and Distribution

Rajiv Grover, *Head*
Srinivas K. Reddy, *Graduate Coordinator, (PhD).* 542-3759
George M. Zinkhan, MMR *Graduate Coordinator,* 542-3763
(Brooks Hall)

(MARK)ECON 4750/6750. Introduction to Econometrics. 3 hours.
Undergraduate prerequisite: ECON 4010 and (STAT 2000 or MSIT 3000).
Estimation and hypothesis-testing techniques using the linear regression model, with emphasis on the least-squares estimator and its performance under different statistical assumptions. A hands-on approach, stressing a wide range of empirical applications.

MARK 7000. Master's Research. 1-10 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

MARK 7630. Creative Problem Solving. 1.5 hours.
Prerequisite: Permission of department.
Understanding the creative process, stimulating creative thinking in problem solving situations, and ap-

plying problem solving techniques to marketing. Introduces tools and techniques for developing skills in idea generation and creative problem solving.

MARK 7690. Strategic Logistics and Supply Chain Management. 3 hours.
Prerequisite: Permission of department.
Focuses on logistical competency and competitive advantage. Best practices at world class firms (the strategic, structural, and informational). A channel-wide or supply chain perspective will be adopted with emphasis on managing the relationships among businesses involved in the process of buying and selling products and services.

MARK 7720. Promotion Management. 3 hours.
Prerequisite: Permission of department.
Provides management perspective on planning, developing, and evaluating advertising programs. Focus moves from agency-client relationships and the opportunities for advertising for a product or service to analyzing elements of advertising: market, messages, production and measurement.

MARK 8100. Introductory Statistical Methods for Marketing Research. 3 hours.
Prerequisite: Permission of department.
Application of probability and basic statistical methods to marketing research problems.

MARK 8130. Buyer Behavior. 1.5 hours.
Prerequisite: Permission of department.
Buyer decision processes relating to the purchase and consumption of goods and services by both businesses and consumers.

MARK 8150. Overview of Marketing Research Management. 1.5 hours.
Prerequisite: Permission of department.
The function of marketing research in organizations. Examination of the marketing research process.

MARK 8200. Research Design and Data Collection. 3 hours.
Prerequisite: Permission of department.
Data collection procedures in marketing research are considered, particularly questionnaire design for personal interviews and sampling issues.

MARK 8220. Applications of Marketing Research Techniques I. 3 hours.
Prerequisite: Permission of department.
The application of marketing techniques. Focuses on the process of developing a product from idea generation and screening through product testing and copy/positioning evaluation.

MARK 8240. Applied Models in Marketing Research. 3 hours.
Prerequisite: MARK 8100 or permission of department.
Analysis of marketing data. The use of models, regression analysis, and experimental design in marketing research. Emphasizes analysis of field experiments in marketing.

MARK 8250. Marketing Research Project I. 1.5 hours. 1.5 hours lab per week.
Prerequisite: Permission of department.
Students design and complete research projects or management audits in the area of marketing management under the supervision of a faculty member. Special assignments in simulations and business games may also be undertaken.

MARK 8300. Information Technology and Marketing. 3 hours.
Prerequisite: Permission of department.
The use of secondary and syndicated data for effective marketing decision making. Use of computerized data bases and marketing decision support systems. Exploring emerging technologies and their influence on marketing.

MARK 8320. Applications of Marketing Research Techniques II. 1.5-3 hours.
Prerequisite: MARK 8220 or permission of department.
A continuation of Applications of Marketing Research Techniques I. Focuses on evaluating the market potential of new product systems; e.g., product plus price, package, and positioning. Pre-test market evaluation systems, test marketing, tracking studies, research for claim support, and the impact of UPC and scanner technology.

MARK 8350. Marketing Research Project II. 1.5 hours. 1.5 hours lab per week.
Prerequisite: MARK 8250.
A continuation of Marketing Research Project I. Students design and complete research projects or management audits in the area of marketing management under the supervision of a faculty member. Special assignments in simulations and business games may also be undertaken.

MARK 8400. Master's Internship. 1-5 hours.
Prerequisite: Permission of department.
A professional internship during which students gain a practical, working knowledge of the field and refine knowledge, skills, and attitudes developed in the classroom. Students work directly with cooperating manufacturers, agencies, and research firms and are assigned responsibility for various products and or research projects.

MARK 8440. Organization to Organization Marketing. 3 hours.
Prerequisite: MARK 8510.
The fundamental differences between transactional and partnership purchasing, and marketing strategy implications for business, governmental, and retail intermediary markets. How technology, changing demand patterns, marketing complexity, and global competition impact business marketing and the management of buyer-seller relationships and interactions within the supply chain.

MARK 8450. Behavioral Theory and Marketing. 3 hours.
Prerequisite: MARK 8510 or permission of department.
Decision making processes and consumer choice, individual and group level influences on consumer behavior, and the implications of consumer behavior for marketers. Concepts and theories developed in a variety of behavioral disciplines are applied to understanding individuals and organizations as consumers. Relationship building, customer satisfaction, and customer loyalty are stressed as new marketing strategies.

MARK 8460. Market Intelligence and Marketing Research for Managers. 3 hours.
Prerequisite: MARK 8510.
The market information needs of the customer-oriented firm including market trends, market segmentation, competitive intelligence, benchmarking, survey research, database analysis and qualitative methods. Primary and secondary data collection and analysis; brand name advertising and pricing research; sales analysis and forecasting; and customer satisfaction and usage patterns.

MARK 8500. Business Ethics. 1.5-3 hours.
An investigation of processes to resolve moral conflicts in business. Normative guidelines to be applied toward attaining common ground among those operating from different levels of moral reasoning.

MARK 8510. Marketing Management. 2-3 hours.
The process by which customer demand structures marketing response. The positioning of product/service offerings toward building customer satisfaction is examined by its component parts, so that marketing effort can be seen as the vehicle which delivers desired return on investment.

MARK 8520. Marketing Management. 1.5 hours.
The process by which customer demand structures marketing response. The positioning of product/service offerings toward building customer satisfaction is examined by its component parts, so that marketing effort can be seen as the vehicle which delivers desired return on investment.

MARK 8600. Marketing Strategy. 2-3 hours.
Strategic marketing decisions and the development of a cohesive marketing strategy that integrates the elements of the marketing mix within the competitive and market environment faced by the firm.

MARK 8610. Qualitative Research in Marketing. 1.5 hours.
Prerequisite: Permission of department.
Qualitative approaches to conducting marketing research. Paradigmatic assumptions; research design issues; various types of qualitative inquiry, with the primary focus on interviewing and observational methods; issues related to collecting and analyzing data; reporting the findings; and working with clients.

MARK 8620. Management of Marketing Communications. 3 hours.
Prerequisite: Permission of department.
Integrated marketing communications strategy to support the brand's marketplace positioning. The development of the integrated marketing communications program, including advertising, sales promotion, publicity, and presence plans. Other topics include communication models, message strategy, brand equity, measurement of effectiveness, and approaches to determining brand-customer relationships.

MARK 8630. Interpretive Research in Marketing. 1.5 hours.
The sequel to Qualitative Research in Marketing, focusing on alternative qualitative and hybrid approaches to conducting marketing research. Topics include paradigmatic assumptions; how qualitative research facilitates creative problem solving; and how methods are combined. Types of research covered include ethnography, case studies, and content analysis.

MARK 8660. Consumer Goods and Services Marketing and New Product Innovation. 3 hours.
Prerequisite: MARK 8510.
Strategic marketing management issues for consumer brands and services, including developing and managing brand equity in consumer markets; managing marketing innovation and products and services development, including identification and evaluation of new markets to enter, designing and testing of product ideas, and developing a marketing plan for launching the new products or services.

MARK 8990. Directed Study in Marketing Policy. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Students design and complete research projects or management audits in the area of marketing management under the supervision of a faculty member. Special assignments in simulations and business games.

MARK 9000. Doctoral Research. 1-15 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

MARK 9180. Marketing and the Internet. 1.5-3 hours.
Prerequisite: MARK 8510 or permission of department.
Deals with marketing issues relevant in the emerging medium—the Internet and the World Wide Web. The infrastructure necessary to support electronic commerce, along with the role of advertising, promotion, pricing, and distribution in this new technology.

MARK 9210. Customer Relationship Management and Business to Business e-Commerce. 3 hours.
Prerequisite: MARK 8510.
This course is designed to familiarize students with business-to-business sales and e-commerce strategy, including customer interface strategy, sales force role and capabilities, organizational structures and marketing-sales interfaces, how to manage customer relationships and accounts and business-to-business models and processes.

MARK 9230. Global Marketing Strategy. 3 hours.
Prerequisite: MARK 8510.
Strategies by which global firms build the mix of international business activities to include non-traditional entry modes and how such firms create and maintain synergistic partnerships across national boundaries. The impact of cross functional integration on the conduct of global marketing activities and approaches for developing strategic intelligence that will anticipate new competitors from new national players.

MARK 9300. Doctoral Dissertation. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

MARK 9400. Marketing Theory. 3 hours.
Prerequisite: Permission of department.
Essential elements of philosophy of science and their use in marketing. Emphasizes the structure of theoretical explanation and the interaction between marketing theory and practice.

MARK 9450. Seminar in Marketing Management. 3 hours.
Prerequisite: Permission of department.
Current research in the marketing management area, including such content topics as consumer and industrial product development and management, advertising and sales promotion management, pricing, distribution and retail issues, sales management and personal selling as well as the philosophies and methods relevant to applied managerial research.

MARK 9550. Seminar in Buyer Behavior. 3 hours.
Prerequisite: Permission of department.
Theories, concepts, and research in marketing. Psychology, demography, sociology, anthropology, and other behavioral disciplines and their application to understanding individuals as consumers. Consumer decision making, its determinants, and implications for marketers.

MARK 9600. Measurement Issues in Marketing. 3 hours.
Prerequisite: Permission of department.
Seminar in proper design and execution of a research project in marketing. Both descriptive and experimental research designs are discussed in terms of reducing measurement error caused by improper conceptual definitions, sampling procedures, data collection methods, and scale construction.

MARK 9650. Applied Multivariate Methods. 3 hours.
Prerequisite: Permission of department.
Application of multivariate statistical methods to solve marketing problems. Introduction to multivariate statistical computer programs.

MARK 9700. Marketing Models. 3 hours.
Prerequisite: Permission of department.
Quantitative models used to investigate consumer behavior and attitudes, marketing strategies, and market structures.

MARK 9750. Advances in Causal Modeling. 3 hours.
Prerequisite: Permission of department.
Statistical techniques collectively known as structural equation modeling or causal modeling in experimental and survey research in marketing.

MARK 9800. Advanced Research Topics in Marketing. 3 hours.
Prerequisite: Permission of department.
Seminar dealing with the latest research topics in product, advertising, pricing, promotion, distribution, sales, and service research. Emphasis on recent development in theory and methodology.

MARK 9900. Practicum in Marketing. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Completion of a supervised task in marketing in an approved research setting.

The College of Education

Louis A. Castenell, Jr., *Dean*
(Aderhold Hall)

The College of Education offers graduate degree programs at three levels in a variety of fields. These include: Master of Arts in education; Master of Education; Master of Art Education; Master of Music Education; Specialist in Education; Doctor of Education; and Doctor of Philosophy. Many of these graduate programs are designed to meet Georgia school certification requirements.

Although there are common elements in each of the degree programs, there is considerable flexibility to meet individual students' interests and backgrounds. Accordingly, details about specific admission or program requirements and options should be discussed with the appropriate department or division graduate coordinator. General information regarding degree programs available in the College of Education may be obtained from the Office of Graduate Admissions in the Graduate School or from the Office of the Associate Dean in the College of Education.

The Board of Regents has also authorized Master of Education and Doctor of Education programs to be offered cooperatively by the University of Georgia and certain other institutions in Georgia. General information about these degree programs may be obtained from the Graduate School; specific information may be obtained from the Departments of Adult Education and Educational Leadership.

It is possible to earn credit toward graduate degrees in courses taken at off-campus locations. Students should consult their advisors or their department's graduate coordinator to be certain that credit taken in locations other than main-campus can be used in their specific degree program.

Six thousand- and 7000-level courses are generally designed for students enrolled in a master's degree program. Eight thousand- and 9000-level courses are generally designed for students pursuing specialist or doctoral degrees. However, due to differences in background, many students may have a mixture of 6000-, 7000-, 8000-, and 9000-level courses regardless of degree objective.

Adult Education

Bradley C. Courtenay, *Head*
Laura L. Bierema, *Graduate Coordinator,*
542-6174
(River's Crossing)

The goal of the department's instructional mission is to develop students' knowledge and abilities in the social context of adult education, program development and management processes, and teaching and learning processes. The department offers programs of study leading to MEd, EdS, EdD, and PhD degrees.

The MEd in Adult Education is the basic degree for adult education majors whose vocational objectives require preparation for teaching and/or administration in such areas as adult literacy, continuing education, health education, community development, gerontology, and religious education. The MEd in Human Resource and Organizational Development provides students with the opportunity to gain knowledge and skills focusing on learning within the work environment, career development, organizational development, globalization, and technology. The EdS program is designed to provide advanced study in adult education for individuals who seek to enhance their abilities for application in positions and organizations related to the education of adults. The EdD program is designed to prepare students for careers as leaders in positions and organizations related to the education of adults. The PhD program is designed to prepare students for careers in research-oriented positions related to the education of adults.

EADU 6000. Special Problems in Adult Education. 3 hours. Repeatable for maximum 9 hours credit.
Specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

EADU 6010. Introduction to Adult Education. 3 hours.
The field of adult education incorporating topics such as the profession, history and philosophy of the adult education movement, delivery systems, programs and organization, and trends and issues.

EADU(READ) 6040. Teaching Reading to Low-Literate Adults. 3 hours.
Causal factors contributing to adult literacy and undereducation and instructional approaches appropriate for teaching adults to read.

EADU 6070. Survey of Educational Gerontology. 3 hours.
Social gerontology with an emphasis on adult education. Background knowledge on aging dealing specifically with program development and the involvement of older adults in educational programs is provided.

EADU 7020. Adult Learning and Instruction. 3 hours.
Learning theories, models, and principles and their application to the instructional process with adults.

EADU 7030. Program Development in Adult Education. 3 hours.
Guided study and practice in developing educational programs for adults in colleges, public schools, and other institutions. Includes identifying needs, establishing objectives, and critically designing and evaluating programs in adult education.

EADU 7650. Applied Project in Adult Education. 3 hours. Repeatable for maximum 6 hours credit.
Integration of adult education theory and practice in applied project significantly related to the student's professional goals. Focus is on critical reflection in practice.

EADU 8010. History and Philosophy of Adult Education. 3 hours.
The development of adult education as a field of study, research, and practice based on historical and philosophical perspectives. Significant social, economic, political, and demographic issues affecting the development of adult education.

EADU 8020. Adult Education in Social Context. 3 hours.
The social context of adult education, including race, class, and gender analyses, and the role of adult education in society. Relevant historical, sociological, political, and economic factors that influence adult education theory and practice.

EADU 8030. International Adult Education. 3 hours.
History, goals, governmental and nongovernmental organizations and delivery systems worldwide are considered in light of the global economy. Issues of access and opportunity, societal versus individual change, and the meaning of development are explored. Adult Education in various regions and countries is compared.

EADU 8040. Theoretical Perspectives on Adult Literacy. 3 hours.
Theoretical perspectives of adult literacy and undereducation. Sociological, linguistic, historical, and psychological perspectives. Implications for adult literacy education.

EADU 8050. Multicultural Issues in Adult Education. 3 hours.
Cultural (racial, ethnic, linguistic) diversity in the adult educational context. Topics include cultural self-awareness, demographic changes and projections, problems/issues in inter-cultural educational settings, theoretical perspectives of multicultural adult education, practical problems and related strategies in handling diversity in adult education settings.

EADU 8090. Adult Development and Instruction. 3 hours.
Adult developmental psychology, including the nature of adult development; issues and trends in the field; theories of adult growth and development; changes in young, middle, and older adulthood; and implications for instruction and learning of adults.

EADU 8100. Adult Education and Public Policy. 3 hours.
The role and practice of adult education in the formation and implementation of public policy. Major topics include the history of public policy and adult education; major movements and trends; the public policy process today.

EADU 8110. Adult Education for Community Development. 3 hours.
Critique of community action and learning processes in community settings. An introduction to how adult educators and human resource developers develop communities.

EADU 8120. Critical Perspectives on Adult Education. 3 hours.
Critical perspectives on adult education theory, research, and practice. Perspectives include critical theory, feminist theory, and issues of race, class, gender, and culture as they relate to the production of knowledge for adult education and the practice of adult education.

EADU 8140. Impact of Gender and Race on Learning in the Workplace. 3 hours.
The effects of gender and race in the workplace, focusing on the field of adult education and related areas. The impact of sociological, economic, racial, and gender theories are analyzed.

EADU(EOCS) 8190. Human Resource Development. 3 hours.
Explores three areas of practice and theory of HRD: training, career development, and organization development. HRD practice at the individual, group, and organizational levels.

(EADU)EDIT 8200. Theory and Practice of Educational Change. 3 hours.
Individual and collective meanings of change, theory, and practice of organizational change and development in a variety of educational settings.

EADU 8610. Trends and Issues in Adult Education. 3 hours. Repeatable for maximum 6 hours credit. Not open to students with credit in EADU 9610.
Selected topics and issues in practice, research, and theory of adult education.

EADU 8620. Adult Education Administration. 3 hours.
Administration in adult education organizations with emphasis on theoretical constructs underlying good management practice. The contributions or research for such management roles as program development, leadership, organizational change, and evaluation are highlighted.

EADU 8640. Continuing Education for Professionals. 3 hours.
Theoretical and research literature related to the continuing education for professionals. Topics include professionalization, professional practice, professionals as learners, developing and evaluating educational programs, and the institutional context of continuing professional education.

EADU 9000. Doctoral Research. 1-18 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EADU 9020. Adult Learning Theory and Research. 3 hours.
Research and theory in adult learning, including social and psychological aspects of adult learning, participation and motivation, self-directed learning, transformative learning, and recent theoretical perspectives.

EADU 9030. Program Planning Theory and Research in Adult Education. 3 hours.
Theoretical and research literature related to planning educational programs for adults. Special emphasis is placed on the political, ethical, and technical issues faced by adult educators.

EADU 9050. Human Resource and Organizational Development. 3 hours.
The literature in human resource and organizational development.

EADU 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EADU 9600. Research Seminar in Adult Education. 3 hours. Repeatable for maximum 6 hours credit.
Advanced research methods in adult education.

EADU 9601. Foundations of Adult Education Research. 3 hours. Repeatable for maximum 6 hours credit.
The conceptual and logical underpinnings of the research process in adult education.

EADU 9602. Research Practices in Adult Education. 3 hours. Repeatable for maximum 6 hours credit.
Provides doctoral students with practical experience in the mechanics of adult education research.

EADU 9630. Critique of Educational Literature in Adult Education. 3 hours.
Research studies, dissertations, and journal articles in adult education.

EADU 9640. Prospectus Development in Adult Education. 3 hours. Repeatable for maximum 6 hours credit.
Research methods for dissertation in adult education, including preparation of dissertation prospectus.

EADU 9700. Internship in Adult Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Supervised internship experience in an adult education setting.

EADU 9750. Reflective Practice Seminar. 3 hours.
Past or current work experiences in adult education used as a basis for systematic reflection on practice.

EADU 9800. Practicum in Adult Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Graduate study projects in special topics not available in scheduled courses. Projects include research and field experiences.

Art Education

Andy Nasisse, *Graduate Coordinator,*
542-1592
(Visual Arts Building)

ARED 4010/6010. Techniques of Art Appreciation and Criticism. 3 hours.
Analyzing, interpreting, and evaluating art; the construction of art appreciation curricula; critical methodology as employed in classroom teaching strategies.

ARED 4340/6340. Art for the Exceptional Child. 3 hours.
Nature, identification, and treatment of children's disabilities through art. Emphasizes the role of art for emotional, social, educational, and vocational adjustment of gifted or disabled students.

ARED 5130/7130. Studio Techniques for Art Education. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: Permission of department.
Use of tools, materials, and processes in adapting the studio arts for children at various age levels and in integrating studio with a total art program.

ARED 5230/7230. Special Problems in Art Education I. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Specific problem areas, according to individual needs, are investigated, discussed, and evaluated.

ARED 5310/7310. Multicultural and Cross-Cultural Study in Art Education. 3 hours.
Undergraduate prerequisite: Permission of department.
Various cultural traditions in the United States with emphasis on multicultural and cross-cultural art education curricula.

ARED 5350/7350. Teaching of Art in the Elementary School. 3 hours.
Undergraduate prerequisite: Permission of department.
Recommended practices in qualitative curriculum planning; laboratory experiments that identify philosophical, motivational, and evaluative problems in elementary school art.

ARED 5360/7360. Teaching of Art in the Secondary School. 3 hours.
Undergraduate prerequisite: Permission of department.
Recommended practice in qualitative curriculum planning, together with laboratory projects that identify philosophical, motivational, and evaluative problems in secondary school art.

ARED 5460/7460. Student Teaching in Art Education. 9 hours.
Undergraduate prerequisite: Permission of department.
Undergraduate corequisite: ARED 5470/7470.
Supervised internship in teaching art.

ARED 5470/7470. Issues and Practices in Teaching Art. 3 hours.
Undergraduate corequisite: ARED 5460/7460.
Varied approaches to art issues; practices relevant to art education. Must be taken during student teaching.

ARED 5500/7500. Approaches to Art in the Museum. 3 hours.
Undergraduate prerequisite: Permission of department.
History and current practices in museum education. Emphasis on approaches to aesthetics and art criticism in the museum environment.

ARED 7370. Curriculum Development in Art Education. 3 hours.
Prerequisite: Permission of department.
Curriculum improvement, guidelines for curriculum improvement, curriculum decision making, testing and evaluating operational curriculum innovations.

ARED 7390. Supervision of Art. 3 hours.
Prerequisite: Permission of department.
Problems of the supervisor, consultant, or director of the art program in the community schools, including qualitative curriculum planning and strategies for building potential of the art teacher.

ARED 7650. Applied Project in Art Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Functional study of a topic or problem in Art Education significantly related to the student's professional task.

ARED 8410. History of Art Education. 3 hours.
Prerequisite: Permission of department.
Art educational theory and practice in American schools, beginning with European influences and culminating in current practice.

ARED 8420. Student Assessment and Program Evaluation in the Arts. 3 hours.
Strategies for assessing student learning and program effectiveness in the arts will be investigated with attention to national and state standards. Both in-school and out-of-school programs will be considered. Emphasis will be placed on the visual arts with examples of dance, theater, and music programs also included.

ARED 8430. Readings in Art Education. 3 hours.
Significant writings ranging from classical foundations to contemporary viewpoints in art education with

emphasis upon issues relevant to current art education practice.

ARED 8440. Directed Study in Art Education. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Individual study for doctoral students in art education related to specific problems.

ARED 8990. Research Seminar in Art Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research methodology, critiques of art education research and proposed research projects.

ARED 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ARED 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

ARED 9600. Educational Research in Art Education. 1-9 hours. Repeatable for maximum 9 hours credit. 3 hours lab per week.
Prerequisite: Permission of department.
Independent research on a topic in art education that pertains to the student's primary interest.

ARED 9630. Critique of Educational Literature in Art Education. 3 hours.
Prerequisite: Permission of department.
Research and theoretical writing in the field of education.

Communication Sciences and Disorders

Anne van Kleeck, *Head*
Anne C. Bothe, *Graduate Coordinator,*
542-0436
(Aderhold Hall)

CMSD 4090/6090. Introduction to Phonetics. 2 hours. 1 hour lecture and 1 hour lab per week.
Undergraduate prerequisite: Permission of department.
Identification, discrimination, and IPA transcription of segmental and supra-segmental elements of American English. Emphasis on branches of phonetics; classification schemes; narrow transcription of variants associated with regional dialects, speech disorders, and non-native pronunciations; dialects as manifestations of cultural diversity.

CMSD(LING) 4120/6120. Anatomy and Physiology of Speech, Voice, and Hearing. 3 hours.
Undergraduate prerequisite: Permission of department.
Anatomical structures and basic physiological functions underlying audition, respiration, phonation, articulation, resonance, and swallowing.

CMSD 4130/6130. Language Science. 3 hours.
Undergraduate prerequisite: Permission of department.
Components and structures of language, including analysis of sentences. Language variation and bilingualism.

CMSD(LING) 4140/6140. Introduction to Speech and Voice Science. 3 hours.
Undergraduate prerequisite: CMSD 4090/6090 and CMSD(LING) 4120/6120 and PSYC 1101 and (MATH 1101 or PHYS 1010 or permission of department).
Application of basic physical principles to production and perception of speech and voice. Biomechanics of vocal fold oscillation; acoustics of voice source; resonance; acoustic phonetics; psychoacoustics of speech and voice. Interpretation of objective measures and outputs of computational models.

CMSD 4150/6150. Hearing Science. 3 hours.
Prerequisite or corequisite: CMSD(LING) 4120/6120 or permission of department.
Physics of sound and the physiological and psychological bases of auditory function.

CMSD 4160/6160. Intermediate Speech and Voice Science: Clinical Applications. 3 hours.
Undergraduate prerequisite: (CMSD(LING) 4140/6140 and CMSD 4150/6150 and CMSD 4530 and CMSD 6600) or permission of department.
Application of recent theory and objective measurement techniques to assessment and intervention in speech pathology. Readings include research articles in the "sciences" of speech and voice. Informal laboratory demonstrations and hands-on activities as class size permits. Designed for beginning master's level speech-language pathology majors on a non-thesis track.

CMSD(LING) 4500/6500. Study of Language Development. 3 hours.
Undergraduate prerequisite: Permission of department.
Normal development of children's reception, integration, and expression of linguistic information; cultural,

gender, socioeconomic, cognitive, and prelinguistic influences on language development.

CMSD 4730/6730. Psychosocial Characteristics of Deafness. 3 hours.
Undergraduate prerequisite: CMSD 4710 or permission of department.
Development, adjustment, and educational needs of deaf individuals. Cognitive, personality, and socioemotional development; aptitudes, special abilities, and cultural perspectives.

CMSD 4800/6800. Neural Bases of Speech, Language, and Hearing. 3 hours.
Undergraduate prerequisite: Permission of department.
Neuroanatomy and neurophysiology of speech, language, and hearing from a communication science perspective.

CMSD 4810/6810. Basic Sign Language. 3 hours.
Undergraduate prerequisite: Permission of department.
History and description of sign language systems. Practice in expressive and receptive use of sign language and finger spelling.

CMSD 5790/7790. Rehabilitative Audiology. 3 hours.
Undergraduate prerequisite: CMSD 4710 and permission of department.
Theories and procedures used in the rehabilitation of children and adults with hearing loss.

CMSD 6000. Special Problems in Communication Sciences and Disorders. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Adaptation of the Communication Sciences and Disorders curriculum to meet students' individual needs: supervised or directed reading, research, or clinical experiences.

CMSD 6540. Language Assessment and Intervention with Preschool Children. 3 hours.
Prerequisite: CMSD 4520 and permission of department.
Formal and informal language assessment procedures; selection and implementation of appropriate assessment instruments and models; intervention models for diverse populations.

CMSD 6550. Language Assessment and Intervention with School-Age Children. 3 hours.
Prerequisite: CMSD 4520 and permission of department.
Formal and informal language assessment procedures; selection and implementation of appropriate assessment instruments and models; intervention models for diverse populations. Language requirements for successful classroom performance in kindergarten through high school.

CMSD 6600. Research Design in Communication Sciences and Disorders. 3 hours.
Prerequisite: Permission of department.
Theories, thought processes, and methods underlying science, research, and clinical work in communication sciences and disorders. Emphasis on the tools necessary to be an informed consumer of research publications and a productive contributor to a research-based clinical profession.

CMSD 6700. Diagnosis in Speech-Language Pathology. 2 hours.
Prerequisite: CMSD 4520 and CMSD 4530 and permission of department.
Theory, purpose, selection, administration, and interpretation of formal and informal diagnostic tests and procedures. Determining the differential diagnosis, nature of the problem, and recommended intervention, for clients of all ages with speech and/or language disorders. Requires supervised lab activities for development of diagnostic skills.

CMSD 6740. Articulation and Phonology Disorders. 3 hours.
Prerequisite: Permission of department.
Nature and treatment of disorders of the production of speech sounds. Phonological development and phonological processes; using theoretical and etiological knowledge as the basis of clients' individualized assessment and intervention plans.

CMSD 6750. Voice and Resonance Disorders. 3 hours.
Prerequisite: Permission of department.
Nature and treatment of physiological and other disorders of pitch, loudness, and voice quality, including those associated with cleft palate and laryngectomy. Using theoretical and etiological knowledge as the basis for clients' individualized assessment and intervention plans.

CMSD 6760. Fluency Disorders. 3 hours.
Prerequisite: Permission of department.
Nature and treatment of stuttering, cluttering, and acquired neurogenic stuttering. Using theoretical and etiological knowledge as the basis for clients' individualized assessment and intervention plans.

CMSD 6770. Clinical Audiology. 4 hours.
Prerequisite: CMSD 4710 or permission of department.
Rationale and procedures for measuring aspects of hearing using simple and complex stimuli, threshold and supra-threshold measurements, and physiologic

principles associated with middle and inner ear analysis.

CMSD 6780. Auditory Electrophysiology. 3 hours.
Prerequisite: Permission of department.
Fundamental principles essential to the understanding and measurement of electrocochleography and auditory brainstem responses; the clinical application of these procedures to evaluate the peripheral and central auditory system.

CMSD 6790. Hearing Aids and Other Amplification Systems. 3 hours.
Prerequisite: CMSD 6770 and CMSD 8000 and permission of department.
Design, electroacoustic characteristics, and acoustic characteristics of analog, programmable, and digitally programmable amplification systems, including personal hearing aids and other personal and group systems. Ear mold characteristics and acoustic modifications, fitting strategies, and real-ear measurement.

CMSD 6820. Advanced Electrophysiology. 3 hours.
Prerequisite: CMSD 6780 and permission of department.
Neurophysiologic procedures used in the evaluation of human auditory and vestibular systems, including auditory middle and late responses, and electronystagmography.

CMSD 6840. Neurogenic Speech Disorders/Dysphagia. 4 hours.
Prerequisite: CMSD 6800 and permission of department.
Dysarthria, apraxia, dysphagia, and related disorders affecting the speech musculature. Focus is on neurological correlates of muscle paralysis/paresis, differential diagnosis, and speech/communication rehabilitation.

CMSD 6850. Aphasia. 3 hours.
Prerequisite: CMSD 6800 and permission of department.
Study of acquired aphasia and related neurogenic communicative disorders. Focus is on neurological correlates, differential diagnosis, and rehabilitation.

CMSD 6860. Special Issues in Adult Language Disorders. 3 hours.
Prerequisite: CMSD 6800 and permission of department.
Communication and cognition in normal adults and the influences of aging and acquired neurological impairments on these behaviors. Adult communication disorders associated with dementia, agnosia, non-dominant hemisphere injury, and traumatic brain injury are discussed, with emphasis on their characteristics, assessment, and treatment.

CMSD 6870. Dysphagia. 2 hours.
Prerequisite: CMSD 6800 and permission of department.
Nature and treatment of swallowing disorders in pediatric and adult populations. Using theoretical and etiological knowledge as the basis for clients' individualized assessment and treatment.

CMSD 6880. Augmentative and Alternative Communication. 2 hours.
Prerequisite: CMSD 6800 and permission of department.
Assessment of communication needs and related factors in the design and implementation of systems to assist or substitute for speech. Review of electronic and non-electronic systems, and hands-on experience.

CMSD 6900. Pediatric Audiology. 3 hours.
Prerequisite: CMSD 8000 and permission of department.
Prerequisite or corequisite: CMSD 6790.
Normal auditory development and etiologies of childhood hearing impairment and deafness. Identification and assessment of hearing loss in infants and children, including screening principles and practices and amplification fitting strategies for the very young.

CMSD 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

CMSD 7040. Clinical Practicum in Speech-Language Pathology. 1-3 hours. Repeatable for maximum 15 hours credit.
Supervised clinical practice and field experience with clients of all ages. Direct involvement in all aspects of screening, assessment, and treatment of speech and language disorders. Professional issues related to the practice of speech-language pathology presented in weekly Case Review Seminars.

CMSD 7140. Clinical Practicum in Audiology. 1-3 hours. Repeatable for maximum 15 hours credit.
Supervised clinical practice and field experience with clients of all ages. Direct involvement in all aspects of screening, basic audiological evaluations, special diagnostic tests, and aural rehabilitation. Professional issues related to the practice of audiology presented in weekly Case Review Seminars.

CMSD 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.

Thesis writing under the direction of the major professor.

CMSD 7650. Applied Project in Communication Sciences and Disorders. 1-6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Study of a topic or problem significantly related to the student's professional task. Includes completion of a project. Open to advanced EdS students only.

CMSD 7700. Clinical Internship in Speech-Language Pathology. 3-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Supervised practicum in a hospital, medical center, rehabilitation center, community clinic, public or private school, educational service agency, or a combination of these and similar settings.

CMSD 7770. Internship in Audiology. 3-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Supervised practicum in hospitals, medical centers, community clinics, public/private schools, educational service agencies or a combination of these settings.

CMSD 7780. Pediatric Rehabilitative Audiology. 3 hours.
Prerequisite: CMSD 4710 and permission of department.
Models and procedures for implementing effective auditory rehabilitation for children.

CMSD 7810. Hearing Conservation. 2 hours.
Prerequisite: Permission of department.
Detection of pathological noise and the correction of its effects on human hearing mechanisms in community, industrial, and military settings.

CMSD 7820. Language of Deaf and Hard of Hearing. 3 hours.
Prerequisite: CMSD(LING) 4500/6500 and permission of department.
Theories and strategies for assessing and facilitating language development in individuals who are deaf or hard of hearing, including historical and current approaches.

CMSD 7830. Spoken Language of Deaf and Hard of Hearing. 3 hours.
Prerequisite: Permission of department.
Theories and strategies for assessing and facilitating listening skills and speech skills in individuals who are deaf or hard of hearing.

CMSD 7840. Instructional Strategies and Curriculum for Deaf. 3 hours.
Prerequisite: CMSD 7820 and permission of department.
Development, selection, and modification of instructional materials for early childhood and elementary students who are deaf or hard of hearing; instructional strategies for these children.

CMSD 7850. Written Language of Deaf and Hard of Hearing. 3 hours.
Prerequisite: Permission of department.
Prerequisite or corequisite: CMSD 7820.
Theories and strategies for assessing and facilitating reading and writing in individuals who are deaf or hard of hearing. Impact of hearing loss on written language and language processes.

CMSD 7860. Educational Assessment of Deaf and Hard of Hearing. 3 hours.
Prerequisite: CMSD 7820 and permission of department.
Interview techniques; selection, administration, and interpretation of appropriate norm-referenced and criterion-referenced measures; report preparation; conference procedures.

CMSD 8000. Auditory Processes: Physiological and Psychological Bases. 3 hours.
Prerequisite: CMSD 4150/6150 and permission of department.
The modification and transmission of acoustic information as it travels from the peripheral auditory system through the central nervous system; the limits and characteristics of auditory function as measured using psychophysical techniques.

CMSD 8010. Seminar in Speech and Hearing. 2 hours. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Current literature or research and professional issues at the intersection of speech and hearing sciences and disorders.

CMSD 8030. Advanced Topics in Audiology. 3 hours.
Prerequisite: Permission of department.
Specialized measurement techniques in diagnostic audiology, including acoustic immittance and otoacoustic emissions measures; advanced hearing aid and amplification selection and fitting strategies.

CMSD(LING) 8050. Seminar: Language Acquisition and Disorders. 3 hours.
Prerequisite: Permission of department.
Recent issues and research in language acquisition and disorders. Major theories of development, assessment,

and intervention, with emphasis on integration of theory and clinical practice.

CMSD 8060. Seminar in Auditory Disorders. 3 hours.
Prerequisite: Permission of department.
Congenital and acquired hearing disorders and their effects on the peripheral and central auditory systems.

CMSD(LING) 8360. Advanced Speech and Voice Science. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: [(CMSD(LING) 4140/6140 or CMSD 4150/6150)] and CSCI 1100-1100L and permission of department.
Designed for students at the early stages of thesis or dissertation planning. Specific topics vary depending on student/faculty interests. Lecture/discussion format to present research approaches to acoustic phonetics, voice science, and psychoacoustics. Emphasis on available instrumentation, measurement standards, psychophysics, and issues in signal processing of speech and voice.

CMSD(LING) 8360L. Laboratory in Advanced Speech and Voice Science. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: CMSD(LING) 8360 and permission of department.
Hands-on laboratory exercises emphasizing digital recording techniques and signal conditioning; spectral, spectrographic, and aerodynamic measures of speech and voice; indirect measures of laryngeal vibration; computational models of peripheral auditory processing.

CMSD 8990. Research Seminar in Communication Sciences and Disorders. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Review of research literature and current issues for advanced graduate students.

CMSD 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

CMSD 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 27 hours credit.
Prerequisite: Permission of department.

Counseling and Human Development Services

John C. Dagley, *Head*
Diane L. Cooper, *Graduate Coordinator,*
542-4120
(Aderhold Hall)

Two distinct doctoral programs are offered in the department: the counseling psychology program, and the counseling and student personnel services program. Each program has separate admission standards, curricula, and general requirements.

The counseling psychology program is based on the scientist-practitioner model of training in professional psychology and was fully accredited by the American Psychology Association in 1986. The program, leading to the PhD degree in counseling psychology, prepares graduates for instructional and service positions in colleges and universities and for employment in health agencies and institutions. The curriculum is also intended to be consistent with state licensure requirements for the practice of applied psychology in independent practice.

The counseling and student personnel services PhD program is designed to prepare professionals for careers as college student affairs administrators, graduate faculty members in student affairs professional preparation programs, and/or positions that specialize in student assessment, outcomes research, and program evaluation in higher education. The scientist-practitioner model of graduate education is the foundation of the program. Graduates are expected to possess skills and knowledge as theoretician-researchers and as professional higher education leader-administrators.

There are three master's degree programs in the department, each of which offers the MEd degrees: (1) college student affairs administration; (2) rehabilitation counseling; and (3) guidance and counseling, which has two specialities (school counseling and community agency counseling). The school counseling and community agency counseling programs are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP), and the rehabilitation counseling program is accredited by the Council on Rehabilitation Education (CORE).

The college student affairs administration program focuses on the psychosocial and intellectual development of college students and is designed to prepare practitioners for work in student affairs divisions in areas such as residence halls, student activities, and career planning and placement. The rehabilitation counseling program is designed to educate counselors prepared to assist persons with disabilities in a variety of public and private service and treatment agencies. The guidance and counseling program is designed to prepare graduates to work as school counselors or to work in a variety of community settings, such as mental health centers, alcohol and drug treatment programs, and employment services offices.

The Specialist in Education (EdS) program is offered in guidance and counseling (with specialty in school counseling). The EdS provides advanced education and training in human service delivery and leadership, and is viewed as a terminal degree designed for individuals who do not plan to pursue the doctorate.

Admission to the PhD program is for fall semester only. Admission to all master's degree programs is for summer or fall semester only, depending on the program. Applicants should contact the department's graduate coordinator for detailed information about programs and application procedures. Early application is encouraged because all programs have enrollment limits.

ECHD 4020/6020. Interpersonal Relationships. 3 hours.
Undergraduate prerequisite: Permission of department.
Interpersonal skills are taught and demonstrated by the instructor. Students practice the skills in role-playing situations. Skills included are physical attending, psychological attending, listening, perceiving surface and underlying feelings, basic responding skills, personalizing skills, and initiating skills. Intended for non-majors.

ECHD 6000. Special Problems in Counseling and Human Development Services. 1-3 hours. Repeatable for maximum 6 hours credit.
Specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

ECHD(CHFD)(SOWK) 6010. Issues in Marriage and Family Therapy. 3 hours.
Prerequisite: Permission of school.
Disciplines and professional groups related to marriage and family therapy, including historical, ethical, and legal issues, and other topics relevant to the current practice of marriage and family therapy.

ECHD 6030. Interpersonal Facilitation and Intervention I. 4 hours.
Basic counseling skills for student affairs practice. Course focuses on counseling techniques and theories appropriate for use with college students as they deal with developmental issues and concerns.

ECHD 6040. Interpersonal Facilitation and Intervention II. 3 hours.
Prerequisite: ECHD 6030.
Focuses on strategies and tools that may be used to assist college students, including psychological assessment techniques, career development theory and interventions, and use of facilitation skills in working with staff.

ECHD 7000. Master's Research. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ECHD 7010. Individual Appraisal. 2 hours. 1 hour lecture and 1 hour lab per week.
Prerequisite: Permission of department.
Prerequisite or corequisite: ECHD 7040.
Principles of testing, types of scores, use of instruments and methods of assessing abilities, achievement levels, interests, attitudes, developmental variables, vocational skills, and personality characteristics. Use of test and non-test data in counseling and human development services.

ECHD 7040. Counseling Theories and Skills. 3 hours.
Prerequisite: Permission of department.
Selected theories of counseling and human development and their application to research, theory, and practice in educational, rehabilitation, community, and employment settings. Helping skills will be developed through demonstration and role-playing situations.

ECHD 7050. Career Development Theory. 1 hour.
Prerequisite: Permission of department.
Prerequisite or corequisite: ECHD 7040.
Career development concepts, assumptions, theories, and research in educational, rehabilitation, community, and employment settings.

ECHD 7055. Career Development Interventions. 1 hour.
Prerequisite: ECHD 7050 and permission of department.
Application of lifestyle and career development concepts, assumptions, theories, and research in counseling and educational settings. Emphasis will be placed on career counseling, career education, life planning, assessment, and occupational information.

ECHD 7060. Cross-Cultural Counseling. 3 hours.
Prerequisite: ECHD 6030 ECHD 7040.
Knowledge, skills, and self-awareness needed to counsel members of racially and ethnically diverse populations.

ECHD 7080. Introduction to Group Counseling. 2 hours.
Prerequisite: ECHD 7040 and permission of department.
Introductory group counseling theories. Review of the basics of setting up and conducting counseling groups. Discussion of ethical standards related to group counseling.

ECHD 7090. Structured Group Interventions. 3 hours.
Prerequisite: ECHD 6020 or ECHD 6030.
Basic approaches to structured group work in relation to goals, objectives, and dynamics and the implications of group approaches to personal and educational development of students and adults.

ECHD 7090L. Structured Group Laboratory. 1-3 hours. Repeatable for maximum 6 hours credit. 1-3 hours lab per week.
Prerequisite: ECHD 7090.
Design, implementation, and evaluation of structured group interventions. Group leadership skills will be developed and a structured group devised by the student will be implemented under supervision.

ECHD 7150. Loss and Grief Counseling. 3 hours.
Prerequisite: ECHD 7040.
Conceptualization of loss as a set of generic experiences resulting from a variety of changes across the lifespan. Issues related to the meaning of loss for the individual, factors that influence the grieving process, and the identification and treatment of complicated mourning.

ECHD 7200. Foundations of Rehabilitation Counseling. 3 hours.
Prerequisite: Permission of department.
Prerequisite or corequisite: ECHD 7040.
An overview of the rehabilitation field with emphasis on philosophical, historical, psychological, and organizational foundations, rehabilitation services, and professional practice.

ECHD 7210. Vocational Assessment. 2 hours.
Prerequisite: ECHD 7200 and permission of department.
Assessment methods for identifying individual skills, interests, and support needs to assist individuals with disabilities to develop career and life goals.

ECHD 7230. Coordinating Career and Life Planning Services. 3 hours.
Prerequisite: ECHD 7200 and permission of department.
Coordination of transition and community services and the resources that support accomplishment of individualized rehabilitation goals. Strategies and methods for assisting individuals with disabilities in choosing career and life planning services.

ECHD 7240. Psycho-Social Issues in Rehabilitation. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ECHD 7200 or permission of department.
Psychological and sociological aspects of severe disabilities, including adjustment factors in living with disabilities, community attitudes toward individuals with disabilities, and strategies to change negative attitudes.

ECHD 7250. Medical Information and Assistive Technology. 3 hours.
Prerequisite: ECHD 7200 or permission of department.
Etiology, prognosis, treatment, and vocational implications of varying disabling conditions. Assisting persons with severe disabilities to select technology and other forms of support.

ECHD 7260. Employment Strategies. 3 hours.
Prerequisite: ECHD 7200 or permission of department.
Theory and practice in career development for individuals with disabilities. Employment strategies including innovative job development, job modification, and job creation strategies. Assisting individuals with disabilities to select, obtain, maintain, and advance in employment.

ECHD 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.

Thesis writing under the direction of the major professor.

ECHD 7400. Foundations of College Student Affairs Administration. 3 hours.
The field of college student affairs with emphasis on historical, philosophical, psychological, and sociological foundations, and student service functions.

ECHD 7410. College Student Affairs Interventions. 3 hours.
Prerequisite: ECHD 7400 or permission of department.
Application of student development and organization development theories to the institutional environments of college students for purposes of enhancing their personal and educational development.

ECHD 7420. Theories of College Student Development. 3 hours.
Prerequisite: Permission of department.
Human development and person-environment theories, assessment methods, and their applications to college students.

ECHD 7430. College Student Ecology. 3 hours.
Prerequisite: ECHD 7400 or permission of department.
The modern American college and university and their students, with special emphasis on the diverse student populations. College student ecology, including exploration of trends in higher education, the impact of college on students, and current campus cultures.

ECHD 7440. Administration in College Student Affairs. 3 hours.
Prerequisite: ECHD 7400 or permission of department.
Leadership and administration principles and practices applied to college student affairs programs and services. Administrative approaches designed to support, enhance, and create developmental educational environments for college students.

ECHD 7460. Issues in Student Affairs Administration. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ECHD 7400 and permission of department.
Specific issues in college student affairs administration. Topics will vary but will focus on the development of knowledge and skills in emerging areas relevant to professionals in college student affairs administration.

ECHD 7500. Foundations of School Counseling. 3 hours.
Prerequisite: Permission of department.
Prerequisite or corequisite: ECHD 7040.
The profession of counseling and specialty practice as applied in schools. Consideration of the nature of schools as well as school counseling programs that are comprehensive, developmental, and collaborative in nature.

ECHD 7600. Foundations of Mental Health and Community Counseling. 3 hours.
Prerequisite: Permission of department.
Prerequisite or corequisite: ECHD 7040.
Counselors in mental health counseling settings (such as community agencies, drug and alcohol treatment programs, and employment services). Historical, philosophical, psychological, and sociological foundations of counseling in community settings.

ECHD 7700. Individual Counseling Practicum. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ECHD 7040 and permission of department.
Supervised psychological counseling practice in a setting consistent with the student's professional goals.

ECHD 7720. Advocacy Practicum in Rehabilitation Counseling. 1-2 hours. Repeatable for maximum 4 hours credit.
Prerequisite: ECHD 7040 and permission of department.
The political, social, economic, and environmental barriers faced by people with disabilities.

ECHD 7740. Practicum in College Student Affairs. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Supervised practice within a student affairs program at an institution of higher learning.

ECHD 7770. Issues in Student Affairs Assessment and Evaluation. 3 hours.
Prerequisite: Permission of department.
Prerequisite or corequisite: (ECHD 7400 and ECHD 7420 and ERSH 4200/6200) or ECHD 7940.
Program evaluation and outcomes assessment techniques appropriate for use by college student affairs divisions, which includes review of student affairs literature on evaluation and outcomes measurement, scrutiny of issues associated with assessment of out-of-class learning, published instruments, and qualitative and quantitative designs for outcomes assessment and program evaluation.

ECHD 7820. Internship in Rehabilitation Counseling. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: ECHD 7720 and permission of department.

A supervised experience in a rehabilitation setting appropriate to rehabilitation specialization.

ECHD 7840. Internship in College Student Affairs. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: ECHD 7740 and permission of department.
Supervised experience in a college setting appropriate to college student affairs.

ECHD 7850. Internship in School Counseling. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: ECHD 7700 and permission of department.
Supervised experience in an educational setting appropriate to school counseling.

ECHD 7860. Internship in Community Counseling. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: ECHD 7700 and permission of department.
Supervised experience in a community setting appropriate to community counseling.

ECHD 7920. Research Methods in Counseling and Psychotherapy. 3 hours.
Prerequisite: ECHD 7040.
Behavioral science research methods used to study counseling and psychotherapy. Examination of frequently used qualitative and quantitative research approaches, critique of published research in the field, and development of research plans.

ECHD 7940. Research Methods in College Student Affairs. 3 hours.
Prerequisite: ECHD 7400.
Behavioral science research methods used to study college students and higher education institutions. Examination of frequently used qualitative and quantitative research approaches, critique of published research in the field, and development of research plans.

ECHD 7990. Research Seminar in Counseling and Human Development Services. 1-6 hours. Repeatable for maximum 6 hours credit.
A seminar for master's level students in counselor education dealing with proposed research projects and critiques of the literature.

ECHD 8000. Applied Project in Counseling and Human Development Services. 1-3 hours. Repeatable for maximum 6 hours credit. 1-3 hours lab per week.
Prerequisite: Permission of department.
Individual research in an area pertinent to the field of counseling and human development services, with emphasis on increasing skills necessary to collect, interpret, and utilize research data.

ECHD 8020. Seminar in Counseling and Human Development Services. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Specific areas in counseling and human development services. Topics will vary but will focus on the development of advanced knowledge and skills in emerging areas relevant to professionals in counseling and human development.

ECHD 8030. Psychodiagnosis. 3 hours.
Prerequisite: ECHD 7040 and permission of department.
Key concepts of mental health and illness with an emphasis on examining major issues in psychiatric diagnosis, including gender, racial/ethnic, and cultural factors. Students will become familiar with the DSM classification system and achieve proficiency in making diagnoses.

ECHD 8100. Developmental Counseling. 3 hours.
Prerequisite: ECHD 7040.
Cognitive, psychosocial, person-environment interaction, and life-span development theories in counseling.

ECHD 8110. Adlerian Family Counseling. 3 hours.
Prerequisite: ECHD 7040.
Presentations, demonstrations, and critical analyses of the basic principles and practices of Adlerian Family Counseling. A review of the fundamental tenets of Alfred Adler's approach to family education, intervention, and enrichment.

ECHD 8120. Person-Centered Approach. 3 hours.
Prerequisite: ECHD 7040.
Significant theories in the practice of the Person-Centered Approach. Research and investigation of its applications will be evaluated critically.

ECHD 8130. Expressive Arts and Play Media in Counseling. 3 hours.
Prerequisite: ECHD 7040.
Expressive arts and play media in counseling with children and adolescents.

ECHD 8140. Existential Approaches to Therapy. 3 hours.
Prerequisite: ECHD 7040.
Theory and practice of existential approaches to individual and group therapy.

ECHD 8150. Child and Family Counseling. 3 hours.
Prerequisite: ECHD 7040.
Theories and methods of working with children and families. The understanding of children's development

and behavior and the understanding of family systems and interventions.

ECHD 8160. Gestalt Therapy. 3 hours.
Prerequisite: ECHD 7040.
Significant theories in the practice of Gestalt Therapy. Research and investigation of its applications will be evaluated critically.

ECHD 8170. Theories of Drug and Alcohol Abuse. 3 hours.
The causes and effects of drug and alcohol addiction and the implications for counseling.

ECHD 8180. Counseling the Drug and Alcohol Abuser. 3 hours.
Prerequisite: ECHD 8170.
Advanced counseling and treatment approaches used with drug and alcohol abusers.

ECHD 8990. Research Seminar in Counseling and Human Development Services. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research seminar for individuals or groups of doctoral students dealing with proposed psychological, vocational, educational, and developmental programs and projects.

ECHD 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ECHD 9020. Human Development Services Interventions. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Investigation of theoretical foundations, research findings, and techniques for selected human development interventions. Environmental assessment and milieu management, life skills training, consultation in human service agencies, and organizational development in educational settings.

ECHD 9050. Career Development and Research. 3 hours.
Prerequisite: ECHD 7055 and permission of department.
Career development theory and research, including a comprehensive review of the principles and techniques of career counseling. Special consideration will be given to the seminal research, development theorists, typological theorists, and social learning theorists.

ECHD 9060. Advanced Multicultural Counseling. 3 hours.
Prerequisite: ECHD 7060 and permission of department.
Multicultural issues related to gender, age, disability, and sexual orientation as they pertain to counseling.

ECHD 9080. Advanced Theories and Procedures of Group Work. 3 hours.
Prerequisite: ECHD 7080 and permission of department.
Advanced group work theories with emphasis on techniques and application, ethical responsibilities, and current trends.

ECHD 9100. Constructivist Approaches in Counseling Theory. 3 hours.
Prerequisite: Permission of department.
The origins, current status, and emerging applications of constructivist developmental approaches to counseling psychology.

ECHD 9110. Approaches in Cognitive-Behavioral Therapies. 3 hours.
Prerequisite: Permission of department.
Current cognitive-behavioral models for understanding human problems and behavior change. The cognitive-behavioral movement as a bridge between theory and practice.

ECHD 9220. Rehabilitation Education. 3 hours.
Prerequisite: Permission of department.
Rehabilitation education programming, including accreditation requirements, training grants, field work supervision, and continuing education.

ECHD 9240. Professional Issues in Rehabilitation. 3 hours.
Prerequisite: Permission of department.
History, development, and current issues related to the profession of rehabilitation counseling. Philosophical assumptions, legal and ethical considerations, new rehabilitation service initiatives, and new consumer populations.

ECHD 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

ECHD 9400. Seminar in Student Affairs Administration. 3 hours.
Prerequisite: Permission of department.
Current trends, issues, and research related to contemporary college student affairs practices. Organizational patterns, models, and structures; professional stan-

dards; personnel practices; and innovations in program and service delivery.

ECHD 9410. Organizational Development and Consultation in Higher Education. 3 hours.
Prerequisite: ECHD 9400.
Organizational development strategies and consultation approaches designed to strengthen higher education organizations.

ECHD 9420. Advanced Theories of College Student Development. 3 hours.
Prerequisite: ECHD 7420.
Major theories of college-student psychosocial, intellectual, moral, and ego development; measurement of developmental constructs; and effects of college attendance on each domain. Differences attributable to gender, socioeconomic background, sexual orientation, age, and ethnicity.

ECHD 9430. Environmental Assessment and Milieu Management. 3 hours.
Prerequisite: ECHD 9400 and permission of department.
Theories and techniques for assessing human environments in educational settings and strategies to influence them.

ECHD 9440. Leadership and Policy Development in Student Affairs. 3 hours.
Prerequisite: ECHD 9400 and permission of department.
The theoretical foundations, research findings, and contemporary practices related to the processes of leadership and policy-making in college student affairs division. Specific attention will be given to analyzing the role of leadership in the institution and the effects of policy implementation.

ECHD 9450. Staffing Practices in Student Affairs. 3 hours.
Prerequisite: ECHD 9400 and permission of department.
Research and theory in staff recruitment and selection, new position orientation, staff supervision, staff development and continuing education, and performance appraisal.

ECHD 9460. Issues in Student Affairs Administration. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ECHD 9400 and permission of department.
Theories, models, issues, and practices in contemporary college student affairs administration.

ECHD 9600. Foundations of Counseling Psychology. 3 hours.
Prerequisite: Permission of department.
History, development, and current issues related to the profession of counseling psychology. Philosophical and cultural assumptions, legal and ethical considerations, and implications of selected research topics.

ECHD 9610. Theories of Counseling Psychology. 3 hours.
Prerequisite: ECHD 9600 and permission of department.
Basic theoretical foundations for the profession of counseling psychology. Counseling and psychotherapy, career development, human development, and cultural diversity perspectives.

ECHD 9620. Assessment in Counseling Psychology. 3 hours.
Prerequisite: ECHD 9610 and permission of department.
The administration and interpretation of psychological measure of intellectual, social, and personality characteristics of individuals. The ethical use of test results in counseling individuals from diverse populations.

ECHD 9630. Advanced Psychodiagnosis. 3 hours.
Prerequisite: ECHD 9620 and permission of department.
Use of selected appraisal instruments and techniques, with an emphasis on outcome assessment and the relationship between assessment and psychodiagnosis. Students will become familiar with the DSM classification system and achieve proficiency in making diagnoses.

ECHD 9640. Advanced Group and Family Interventions. 3 hours.
Prerequisite: ECHD 9630 and permission of department.
The role of the psychologist from the perspective of group and family systems. Understanding individuals within the context of families and groups as sociocultural systems. Examination of selected techniques for working with individuals in families and groups.

ECHD 9650. Consultation in Human Systems. 3 hours.
Prerequisite: ECHD 9640 and permission of department.
Application of social psychological research and systems theory to organizational development. Emphasis will be on the role of the counseling psychologist as a consultant and the development of consultation and group leadership skills necessary to work with teachers, clients, patients, families, groups, administrators, and personnel in agencies, organizations, or institutions.

ECHD 9660. Consultation and Program Evaluation. 3 hours.
Prerequisite: ECHD 9650 and permission of department.
Intended to facilitate students' transition from psychologists-in-training to professional counseling psychologists. The seminar will assist students in the integration and articulation of their own theoretical framework to guide their practice and research as counseling psychologists.

ECHD 9670. Professional Development Seminar in Counseling Psychology. 3 hours.
Prerequisite: ECHD 9660 and permission of department.
Emphasis on current and emerging professional issues, including psychology licensure, professional and legal standards, and ethical practice in counseling psychology, as well as current topics in therapy.

ECHD 9680. Process of Counseling Psychology Supervision. 3 hours.
Prerequisite: ECHD 9760 and permission of department.
Each student will supervise two master's-level students in Individual Counseling Practicum. The supervisory sessions will be recorded and critiqued in the supervision course. An updated and systematic understanding of the problems of supervision will be accomplished through a review of the literature.

ECHD 9760. Practicum and Professional Ethics in Counseling Psychology. 3-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Supervised counseling psychology practice and study of professional ethics in an applied setting consistent with the student's professional goals.

ECHD 9770. Doctoral Assessment Practicum. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ECHD 9620 and ECHD 9630 and permission of department.
Supervised practice in psychological assessment with opportunities for practical experiences in diverse settings.

ECHD 9780. Advanced Group Work Practicum. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ECHD 9640 and permission of department.
Supervised practice in group work with opportunities for practical experiences in diverse settings.

ECHD 9830. Administrative Internship in Student Affairs Administration. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: ECHD 9400 and permission of department.
Advanced supervised experience in an applied higher education administrative setting.

ECHD 9840. Research Internship in Student Affairs Administration. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: ECHD 9400 and permission of department.
Advanced supervised experience in an applied higher education research setting.

ECHD 9850. Teaching Internship in Counseling and Human Development Services. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: (ECHD 9400 or ECHD 9600) and permission of department.
Advanced supervised experience in university teaching.

ECHD 9860. Internship in Counseling Psychology. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: ECHD 9760 and permission of department.
An advanced supervised experience in an applied setting.

ECHD 9970. Educational Research in Counseling and Human Development Services. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Designed for advanced graduate students to accommodate research in current psychological, vocational, educational and developmental trends, unique interests and special research efforts.

Educational Leadership

Bradley C. Courtenay, *Head,* 542-4153
Sally J. Zepeda, *Graduate Coordinator,* 542-4058
(River's Crossing)

EDUL 6010. School Law for Administrators. 1 hour.
Not open to students with credit in EDUL 7040.
Essential legal concepts found in the United States and Georgia constitutions, statutes, regulations, and judicial decisions, with emphasis on mastering essential

legal knowledge and on applying the law in educational settings.

EDUL 6011. Special Education Law for Administrators. 1 hour.
Not open to students with credit in EDUL 7040.
Essential special education law concepts found in the United States and Georgia constitutions, statutes, regulations, and judicial decisions, with emphasis on mastering essential legal knowledge and on applying the law in educational settings.

EDUL 6012. The Law and School Personnel. 1 hour.
Not open to students with credit in EDUL 7050.
The course is designed to acquaint the school leader with federal and state laws which impact on the personnel function of schools.

EDUL 6013. Western Theories of Educational Administration. 1 hour.
Not open to students with credit in EDUL 7030.
Understanding theory and theory construction precedes the systematic study of classical administration theorists, including Plato, Aristotle, Machiavelli, Adam Smith, and John Stuart Mill. Theoretical developments in educational administration includeorganizational theorists, human relations theorists, behavioral science theorists, and systems theorists. Theories are historically linked with practical applications emphasized.

EDUL 6014. Shared Governance in Schools. 1 hour.
Not open to students with credit in EDUL 7030.
This course is designed to inform school leaders of political and practical issues in shared decision making in schools. Roles of school-based councils will be explored in light of recent educational policy.

EDUL 6015. TQM in Schools. 1 hour.
Not open to students with credit in EDUL 7030.
Total Quality Management (TQM) is a management theory designedto create consistency of purpose, continuous improvement, andcustomer satisfaction. Merging many of the traditional management theories, TQM is an effective and practical approach to school restructuring through the use of empowered teams, customer-oriented leadership, and data-driven decision making.

EDUL 6016. School Personnel Selection and Evaluation. 1 hour.
Not open to students with credit in EDUL 7050.
The process of recruitment, selection, induction, and evaluation of teachers by school administrators.

EDUL 6017. School Staff Development. 1 hour.
Not open to students with credit in EDUL 7050.
This course is designed to familiarize school leaders with the activities involved in designing a comprehensive staff development program in K-12 schools. The knowledge base, standards, and theory base of staff development are explored.

EDUL 6019. Techniques for Teacher Observation. 1 hour.
Not open to students with credit in EDUL 7020.
This course is designed to acquaint students with the techniques (tools) of teacher observation in order to ensure more successful supervisory classroom visitations. The observation techniques and tools can be adapted to fit more collegial forms of supervision (e.g., peer coaching).

EDUL 6020. Principles of Curriculum Design. 1 hour.
Not open to students with credit in EDUL 7070.
Examination of fundamental principles of curriculum development for K-12 school settings.

EDUL 6021. Principles of Curriculum Evaluation. 1 hour.
Not open to students with credit in EDUL 7070.
Examination of fundamental principles of curriculum evaluation for K-12 school settings.

EDUL 6022. Budgeting and Managing School Accounts. 1 hour.
Not open to students with credit in EDUL 7060.
Instruction in the knowledge and skills necessary to develop and monitor a school-level budget which links school goals to resources.

EDUL 6023. Managing Special Education Programs in Schools. 1 hour.
Not open to students with credit in EDUL 8410.
Essential knowledge and skills regarding due process, individualized education programs, and evaluation and assessment of exceptional students.

EDUL 6024. Student Discipline in Schools. 1 hour.
Essential knowledge and skills regarding the development and implementation of building based/classroom discipline plans in schools.

EDUL 6025. Maintaining and Operating Educational Facilities. 1 hour.
Not open to students with credit in EDUL 8200.
Methods and procedures for dealing with problems of maintaining and operating the physical learning environments in schools.

EDUL 6026. Planning for School Improvement. 1 hour.
Based on the model followed in the SACS School Improvement Process, the course is designed to acquaint

students with developing a five-part plan for improvement (school profile, beliefs and mission, desired results for learners, analysis of practices, action plan) and a plan for implementation and follow-up.

EDUL 6027. Managing Student Activity Funds. 1 hour.
Not open to students with credit in EDUL 7060.
Instruction in the technical and legal aspects of managing student and other activity funds.

EDUL 6990. Research Seminar in Educational Leadership. 1-6 hours. Repeatable for maximum 6 hours credit.
Research projects and critiques of the literature in educational leadership.

EDUL 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

EDUL 7020. Supervision of Instruction. 4 hours.
The basic concepts of supervision, its contribution to the total school program, and means of improving instruction through supervision.

EDUL 7030. Organizational Leadership in Schools. 4 hours.
Theories, models, and research focusing on the development of a reflective-critical understanding of school leadership.

EDUL 7040. School Law. 4 hours.
Legal principles applied to educational institutions, including federal and state constitutional provisions, legislation, administrative regulations, and case law.

EDUL 7050. Personnel Administration and Staff Development. 4 hours.
Principles, policies, and procedures for employer-employee relationships in school systems. Comprehensive planning and implementation of staff development programs in schools. Emphasis is on human resource management.

EDUL 7060. School Business and Resource Management. 4 hours.
Business management functions, with emphasis given to the budgeting process, accountability, and educational efficiency.

EDUL 7070. Curriculum Development and Evaluation. 4 hours.
Not open to students with credit in EDUL 8020.
Principles of curriculum development and evaluation of the improvement of the life and program of schools.

EDUL 7090. Instructional Development. 2 hours.
The basic nature of classroom instruction, key elements of the instructional process, organizing operations, and skills for evaluating and improving instruction.

EDUL 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

EDUL 7600. Research in Educational Leadership. 4 hours.
The types of educational research and issues in research design and methodology in educational leadership.

EDUL 7650. Applied Project in Educational Leadership. 3 hours. Repeatable for maximum 9 hours credit.
Study of a problem in administration, curriculum, instruction, or supervision. A proposal for study must be approved by a faculty member.

EDUL 7800. Practicum in Educational Leadership. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Guided and supervised learning opportunities allowing students to test principles in the field and to relate theory to practice in actual institutional settings.

EDUL 8000. Special Problems in Educational Leadership. 1-4 hours. Repeatable for maximum 4 hours credit.
Projects designed to provide specialized training appropriate to the needs of the individual. The project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

EDUL 8010. Curriculum Foundations and History. 4 hours.
Not open to students with credit in EDUL 7010.
Social, historical, and professional foundations of curriculum theory and development.

EDUL 8030. Classic Theories of Organizational Leadership. 4 hours.
Analysis and application of classic theories of organizationalleadership with respect to educational settings.

EDUL 8040. Social Psychology of Schools. 3 hours.
The organizational and cultural factors that contribute to the formation of teacher and student identities. Practices such as tracking, assignment of students to special education, extra-curricular activities, evaluation, rewards, and peer influences will be considered in

terms of their implications for self development and understanding.

EDUL 8050. Organizational Development and Change. 2 hours.
Organizational effectiveness and the quality of work life emphasizing the processes of planning and implementing changes to the culture/climate of the individuals in a school and the school as a system using sociology and social psychology research methodologies.

EDUL 8060. History of Leadership in American Schools. 4 hours.
Examination of noted leaders and historical development of leadership in American education.

EDUL 8070. Ethics in Educational Leadership. 3 hours.
The various ethical dimensions of educational leadership, involving both content and process.

EDUL 8080. School Finance. 4 hours.
Prerequisite: EDUL 7060.
Analysis of intergovernmental transfers of resources for publiceducation. Concepts of equity, equality, and adequacy will formthe basis for analysis. Completion of computer simulations offunding mechanisms as well as calculation of equity measures willbe required.

EDUL 8120. Public School Superintendency. 2 hours.
The roles and responsibilities of the public school superintendent.

EDUL 8130. Trends and Issues in Educational Leadership. 3 hours. Repeatable for maximum 9 hours credit.
Selected issues in educational leadership.

EDUL 8140. Schools as a Social System. 3 hours.
Schools viewed as one social system within the matrices of other social systems.

EDUL 8200. Educational Facilities Planning. 4 hours.
Principles, concepts, processes, and practices of planning and evaluating educational facilities.

EDUL 8210. Education Policy Analysis. 4 hours.
The context, causes, and consequences of education policy.

EDUL 8240. Group Development in the Schools. 3 hours.
Organizational development, group development, communications, role behaviors, leadership, goal setting, problem-solving, conflict reduction, and decision making.

EDUL 8250. Designing Educational Learning Environments. 2 hours.
The conceptual framework for employing modern technology in the design of schools.

EDUL 8260. Designing Outside Learning Environments for Schools. 2 hours.
Design of outdoor learning spaces for schools that fit curriculum specifications for playgrounds, nature trails, and other environments.

EDUL 8270. Managing School Design and Construction. 4 hours.
Planning and managing the design phase of schools, bidding, evaluating architectural designs, and managing the construction phase.

EDUL 8290. Politics of Education. 4 hours.
Local, state, federal, and nongovernmental political influences operating in the public schools.

EDUL 8390. School-Community Relations. 3 hours.
Building a sound school-community relations program involving teachers, parents, community members, industry, and government.

EDUL 8410. Administration and Supervision of Special Education. 4 hours.
The needs of exceptional children with particular emphasis on planning and implementing comprehensive special education programs, including a supervised field experience.

EDUL 8990. Research Seminar in Educational Leadership. 1-6 hours. Repeatable for maximum 9 hours credit.
Research topics in educational leadership, including the preparation of a dissertation prospectus.

EDUL 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EDUL 9040. Curriculum Theory and Policy. 4 hours.
Analysis and evaluation of competing curriculum theories and their implications for educational policy and practice.

EDUL 9090. Economics of Education. 2 hours.
Not open to students with credit in EDUL 8090.
Economic forces, including those involved in financing public schools.

EDUL 9170. Seminar in School Law. 2 hours. Repeatable for maximum 4 hours credit.
Specific areas of school law mutually agreed upon by the student and instructor.

EDUL 9220. Strategic Planning in Educational Leadership. 2 hours.
Strategic planning theory and concepts.

EDUL 9250. Supervision Theory. 2 hours.
Forces impinging upon education and the implications of these findings for supervision.

EDUL 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EDUL 9620. Directed Doctoral Readings. 1-9 hours. Repeatable for maximum 9 hours credit.
Specialized study while enrolled for a doctoral degree under the direction of a major professor.

EDUL 9630. Critique of the Literature in Educational Leadership. 3 hours. Repeatable for maximum 9 hours credit.
Critical interpretation and evaluation of research and theoretical writing in the field of educational leadership.

EDUL 9700. Internship in Educational Leadership. 1-9 hours. Repeatable for maximum 9 hours credit.
A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

Educational Psychology

Randy W. Kamphaus, *Head*
Paul Schutz, *Graduate Coordinator,* 542-4247
(Aderhold Hall)

The department's primary missions are to prepare highly skilled professionals to serve in academe and other settings, and to enhance the theoretical and technical training of graduate students. For its own graduate students, the department provides preparation to those who would serve as school psychologists, as specialists in gifted/creative education, cognition and development, and as evaluation and research methodologists. Students in programs outside the department are provided with general training in learning and development and in quantitative and qualitative research methods.

The department offers programs of study leading to MEd, EdS, EdD and PhD degrees. Program areas include applied cognition and development, gifted/creative education, research design in education, and school psychology. Students may pursue a master's degree with the thesis option through the MA in education degree. The department also includes the Torrance Center for Creative Studies and the School Psychology clinic.

The school psychology programs meet the applicable standards of the Georgia Department of Education, the National Association of School Psychologists, and the American Psychological Association.

Educational Psychology

EPSY 4000/6000. Independent Study in Educational Psychology. 1-6 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Independent study agreed upon by the student and sponsoring professor.

EPSY 4310/6310. Prevention and Remediation of Classroom Behavior Problems. 3 hours.
Prevention and management of classroom behavior problems using behavioral, humanistic, and motivational strategies. Focuses on prevention of problem behaviors through effective teaching and classroom design.

EPSY 6010. Foundations of Human Development for Education. 3 hours.
The interactive influences of biology, family, culture, and extended environment on children's emotional, social, and cognitive development during the school years. The implications of regularities and diversity in development for teaching and learning and on principles of educational practice to enhance development.

EPSY 6060. Foundations of Motivation for Education. 3 hours.
Current theory and research in motivation and motivational processes. The goal is to help students develop a foundational understanding of motivational constructs in the educational setting.

EPSY 6240. Child Psychopathology and Schooling. 3 hours.
Etiology and typical behaviors of children with major psychological and psychiatric disorders. Special emphasis is given to diagnostic criteria. DSM-IV and Special Education classification systems are presented. Impact of these disorders on schooling is a major focus.

EPSY 6300. Introduction to School Psychology and School-Based Services. 3 hours.
History, functions, duties, and responsibilities of psychologists in schools and other applied settings serving children, adolescents, and families relative to schooling issues. Roles of school psychologists in special education diagnosis and placement and other service delivery models in schools.

EPSY 6470. Special Topics in Educational Psychology. 3 hours. Repeatable for maximum 12 hours credit. Not open to students with credit in EPSY 6160.
Prerequisite: Permission of department.
Special topics in educational psychology for master's level students.

EPSY 6800. Foundations of Cognition for Education. 3 hours.
Cognitive psychology as applied to education. Cognitive theories, models, and processes are applied to the teaching and learning of school skills and content areas. Processes such as attention, critical thinking, concept formation, language, memory, and problem solving are examined. Cognitive psychology principles are used to examine and refine instructional methods.

EPSY 6990. Master's Seminar in Educational Psychology. 1-6 hours. Repeatable for maximum 12 hours credit.
Seminar in educational psychology dealing with review of research projects and literature critiques.

EPSY 7000. Master's Research. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

EPSY 7060. Assessment of Gifted Children and Youth. 3 hours.
Prerequisite: ERSH 4600/6600.
Measurement of intellectual and creative abilities for identification and evaluation, with a focus on administering and scoring the Torrance Tests of Creative Thinking; assessment of abilities in special populations of the gifted.

EPSY 7100. Individual Assessment of Development. 3 hours. 2 hours lecture and 1 hour lab per week.
Prerequisite: EPSY 7060.
The measurement of intellectual, academic, and adaptive behavior development, and screening.

EPSY 7110. Characteristics of Gifted Children and Youth. 3 hours.
Prerequisite: EPSY 2020.
Psychological characteristics of gifted children and youth, including studies of the lives of eminent persons, empirical studies of gifted children and youth today, and models for identifying gifted children.

EPSY 7160. Special Problems in Applied Cognition and Development. 3 hours. Repeatable for maximum 6 hours credit.
Selected issues in applied cognition and/or development of particular interest to educational practitioners in a seminar setting. Examples include uses of cooperative grouping, multicultural issues in cognition and learning, teaching metacognitive strategies, and techniques for motivating students.

EPSY 7200. Diagnosis of Social-Emotional Behavior in Education. 3 hours.
Administration, scoring, and interpretation of test materials designed to diagnose social and emotional adjustment problems in school children. Emphasis is given to the effects of social and emotional adjustment on adjustment in schools.

EPSY 7210. Multicultural Gifted and Talented Education. 3 hours.
Prerequisite: Permission of department.
Theories, research, and practice concerned with recognizing and developing the gifts and talents of children from diverse cultural backgrounds. Contemporary and historical perspectives will be provided on attributes of strength, self-perceptions of ability, family factors, environmental factors, and assessment tools and procedures.

EPSY 7230. Strategies and Materials for the Gifted. 3 hours.
Prerequisite: EPSY 7110 or permission of department.
Teaching strategies and related instructional materials for the gifted student.

EPSY 7250. Program and Curriculum Development for the Gifted. 3 hours.
Prerequisite: EPSY 7110.
Program planning for gifted students, including curriculum inventory and development, program, models, and evaluation.

EPSY 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

EPSY 7310. Consultation Processes in Educational Settings. 3 hours.
Problems in interprofessional communication among school psychologists, teachers, and parents. Social influence processes among these communicators are also discussed.

EPSY 7320. Individual Psychoeducational Intervention. 3 hours.
Individual and family treatment approaches to a number of child and adolescent psychopathologies common in schools, with emphasis primarily on cognitive-behavioral interventions.

EPSY 7650. Applied Project in Educational Psychology. 3 hours.
Functional study of a topic or problem in applied cognition and development, gifted and creative education, research methods and measurement, or school psychology.

EPSY 7700. Infant and Preschool Assessment. 3 hours.
Prerequisite: EPSY 7100.
Administration, scoring, and interpretation of major measurement instruments used in early childhood. Special emphasis is placed on the educational implications of test findings.

EPSY 8020. Developmental Psychology and Instruction. 3 hours. 3 hours lab per week.
Prerequisite: EPSY 6010.
The role that developmental psychology plays in the instructional process is examined from an advanced perspective. The focus is on the implications of psychological theories of development for improving teaching and learning in schools and other educational settings.

EPSY 8060. Advanced Seminar in Motivation for Education. 3 hours.
Prerequisite: EPSY 6010 or EPSY 6060 or EPSY 6800.
Examines research on goals, expectancy, self-efficacy beliefs, and attributional beliefs. The focus will be on primary sources that are theory-based and research oriented.

EPSY(LING)(PSYC) 8130. Psycholinguistics. 3 hours.
Recent theoretical and experimental work on the psychological aspects of semantics, grammar, and discourse processes are surveyed. Language development is also considered.

EPSY 8160. Special Topics in Educational Psychology. 3 hours. Repeatable for maximum 12 hours credit.
Selected topics in applied cognition and development, gifted and creative education, research methods and measurement, or school psychology.

(EPSY)READ 8170. Psychology of Reading. 3 hours.
Psychological foundations of reading ability, instructional methods, and materials.

EPSY 8180. Psychology of Learning and Instruction. 3 hours.
The role that psychology plays in the instructional process. Advanced psychological theories and models are applied to learning in schools and other educational settings. The implications of current cognitive science research for improving teaching and learning at all developmental levels.

EPSY 8190. Achievement and Intelligence. 3 hours.
Prerequisite: EPSY 6010 or EPSY 6060 or EPSY 6800.
Examines theories of intelligence and achievement. Different theories, including psychometric, social, and genetic theories of the development of intelligence and achievement.

EPSY 8200. Learning Difficulties of Gifted Children and Youth. 3 hours.
Prerequisite: Permission of department.
Teaching gifted students with special needs, including dual exceptionalities, limited English proficiency, gender issues, cultural implications, and special needs because of age, type of giftedness, and degree of exceptionality.

EPSY 8220. Theories of Creativity. 3 hours.
Prerequisite: Permission of department.
Theory and research concerned with the creative process, creative problem solving, creative thinking abilities and their measurement, the creative personality, and environmental and classroom conditions that facilitate creative functioning and development.

EPSY 8240. Creativity: Instructional Procedures and Problem Solving Processes. 3 hours.
Prerequisite: Permission of department.
Basic theory and practice of creative thinking techniques, including ideation strategies and group problem solving techniques.

EPSY 8340. Child Neuropsychology. 3 hours.
Prerequisite: PSYC 6910.

Normal and abnormal development of the central nervous system; functional organization of the brain in children and adolescents; neuropsychological basis of developmental learning disabilities, ADHD, and other behavioral/psychiatric disorders; traumatic brain injury; pediatric neurological syndromes and diseases; neurodiagnostic and neuropsychological assessment procedures.

EPSY 8700. Practicum in Applied Cognition and Development. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Supervised practice in approved setting for conducting work relevant to applications of cognitive or developmental theory to education.

EPSY 8710. Practicum in Gifted and Creative Education. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: EPSY 7060 and EPSY 7230 and EPSY 7250.
Supervised learning opportunities allowing students to test basic principles and techniques in gifted and creative education and to relate theory to practice in selected settings.

EPSY 8720. Practicum in School Psychology. 1-9 hours. Repeatable for maximum 40 hours credit.
Prerequisite: EPSY 6240 and EPSY 7100 and EPSY 7200 and EPSY 7320.
Supervised practicum in the school psychology clinic or other approved institutional settings.

EPSY 8750. Practicum in College Teaching. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Supervised practice in teaching at the college level. Students will develop skills in course organization, resource identification, lesson planning and delivery, student assessment, and techniques for course improvement.

EPSY 8900. Internship in School Psychology. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: EPSY 7100 and EPSY 7200 and EPSY 7320.
Supervised practice in approved school psychology institutional settings.

EPSY 8990. Doctoral Seminar in Educational Psychology. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Seminar for doctoral level students in educational psychology dealing with review of research projects and critiques of literature.

EPSY 9000. Doctoral Research. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EPSY 9140. Individual Clinical Measurement Consultation. 3 hours.
Prerequisite: EPSY 7100 and EPSY 7110.
Prepares the advanced student in applied educational psychology to deliver indirect measurement and assessment services in educational settings. Sample measurement services include parent and teacher educational services, dimensional and actuarial classification schemes, screening, and other topics.

EPSY 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EPSY 9330. Advanced Psychological Interventions in Schools. 3 hours.
Prerequisite: EPSY 7320.
Critical interpretation and evaluation of research and theoretical writing related to selected psychoeducational interventions.

EPSY 9510. Topics in School Psychology. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Critical evaluation of literature, research, policy, and practice relating to specific issues in school psychology.

EPSY 9620. Professional Practice of Psychology in Education. 3 hours.
Prerequisite: EPSY 6300.
Familiarizes the advanced students in applied educational psychology with professional practice issues such as licensure/certification, business planning, ethical and legal issues, interdisciplinary collaboration, and professional identity development. An emphasis will be placed on the integration of science and practice.

EPSY 9630. Critique of Literature in Educational Psychology. 3 hours.
Prerequisite: ERSH 4200/6200.
Critical interpretation and evaluation of research and theoretical writing in educational psychology.

EPSY 9700. Internship in Applied Cognition and Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.

A study-work program in applied cognition and development. Class or conference study of problems encountered by the intern with remainder of time in application of principles to professional practice.

EPSY 9710. Internship in Gifted and Creative Education. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Advanced experiences providing students with opportunities to refine competencies related to innovative and experimental application of principles and techniques in selected settings under the supervision of gifted and creative education faculty.

EPSY 9720. Advanced Internship in School Psychology. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: EPSY 6240 and EPSY 7100 and EPSY 7200 and EPSY 7320.
Supervised practice in approved school psychology institutional settings.

Educational Research and Measurement

ERSH 4200/6200. Methods of Research in Education. 3 hours.
Diverse research approaches used in behavioral science settings, including critical review and interpretation of published research.

ERSH 4300/6300. Applied Statistical Methods in Education. 3 hours.
Undergraduate prerequisite: ERSH 4200/6200.
Techniques for describing and summarizing data for educational research studies. Applications of the standard normal distribution and the use and interpretation of standard scores. Inferential statistics for one and two population studies including means, proportions, and correlations.

ERSH 4600/6600. Applied Educational Assessment. 3 hours.
Development, administration, scoring, analysis, and interpretation of classroom educational assessments used in the service of instruction and accountability objectives. Traditional as well as current approaches (portfolios, performance assessments). Although classroom approaches are emphasized, standardized measures are also studied.

ERSH 7250. Educational Program and Project Evaluation. 3 hours.
Prerequisite: ERSH 4600/6600 and ERSH 6300.
Innovative or ongoing educational programs, projects, or curricula. Consideration is made of goal specification, data collection, standard setting, and reporting. Interdisciplinary points of view are stressed.

ERSH 7400. Qualitative Research Traditions. 3 hours.
Prerequisite: ERSH 4200/6200.
Foundations of qualitative design: history, philosophy, nature, types, examples, and assessment. Reading and evaluating reports of qualitative research in education and identifying methodological issues.

ERSH 7600. Construction of Educational Measuring Instruments. 3 hours.
Prerequisite: ERSH 4600/6600 and ERSH 6300.
Hands-on experience in instrument development, especially in the affective domain. Scaling methods will be considered in addition to actual item and reliability analyses. Techniques such as Likert, Thurstone, and Osgood's semantic differential method.

ERSH 7800. Topics in Educational Research. 1-3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: ERSH 6300.
Special topics in educational research focusing on methodological applications. Topics include understanding standardized tests, policy issues in educational assessment, using large databases, computer application in educational assessment and data analysis, large scale school assessment programs.

ERSH 8310. Applied Analysis of Variance Methods in Education. 3 hours.
Prerequisite: ERSH 6300.
Experimental design and the analysis of data from experiments, including orthogonal analysis of variance for single and multifactor designs, randomized block, repeated measures, and mixed models. Computer applications and the reporting results using APA style.

ERSH 8320. Applied Correlation and Regression Methods in Education. 3 hours.
Prerequisite: ERSH 8310.
Nonexperimental and quasi-experimental research studies, including simple and multiple regression techniques, nonorthogonal analysis of variances, correlation techniques, and analysis of covariance.

ERSH 8350. Multivariate Methods in Education. 4 hours.
Prerequisite: ERSH 8320.
Discriminant analysis, multivariate analysis of variance, canonical correlation analysis, and cluster analysis. Relating research questions to methods, conducting computer analyses, interpreting computer printouts, and critiquing analysis reports.

ERSH 8360. Categorical Data Analysis in Education. 3 hours.
Prerequisite: ERSH 8320.
Categorical data analysis with emphasis on practical applications in educational research and on the use of computing packages for analysis of such data. Topics include contingency table analyses, generalized linear models, logistic regression, and loglinear models. These techniques are applied to data sets from educational research.

ERSH 8410. Designing Qualitative Research. 3 hours.
Prerequisite: ERSH 7400.
Disciplinary origins and cross-disciplinary uses, variations, applications, and evaluations of methods of collecting qualitative data. Choice of methods in the overall construction of qualitative designs, practice in selecting and collecting qualitative data for educational research, and examination of naturalistic data in the educational literature.

ERSH 8420. Analyzing Qualitative Data. 3 hours.
Prerequisite: ERSH 8410 or permission of department.
Approaches to analysis in the design of qualitative research studies. Procedures are surveyed and compared from a range of social science and professional disciplines for use in studying educational problems and topics.

ERSH 8510. Theories in Qualitative Design. 1-3 hours.
Prerequisite: ERSH 8410 or permission of department.
Theories in qualitative research design and conduct. Theories commonly used in qualitative approaches to educational problems and issues; sociocultural, psychosocial, critical, feminist, and postmodern theories.

ERSH 8520. Interviewing Research. 1-3 hours. 2-6 hours lab per week.
Prerequisite: ERSH 8410 or permission of department.
Conceptual framework for interviewing, approaches associated with various disciplines and schools of inquiry, forms and structures interviewing takes, the criteria developed to assess interviews, and interviewing practice across a variety of situations. Recording, analyzing, and reporting interview data, ethical and relationship issues, and research on interviewing methods.

ERSH 8530. Case Study Research. 1-3 hours. 2-6 hours lab per week.
Prerequisite: ERSH 8410 or permission of department.
Case study as a research design. Topics are types of case studies, defining the case, site and sample selection, data collection methods, within-case and cross-case analysis, and writing case reports.

ERSH 8540. Participant Observation. 1-3 hours. 2-6 hours lab per week.
Prerequisite: ERSH 8410 or permission of department.
Qualitative approaches to observation in education: participant and nonparticipant observation and ethnographic, ethnological, and field study. Choices of such approaches in qualitative design, their development, application, and evaluation, are compared and selected versions are practiced.

(ERSH)ELAN 8550. Writing Up Qualitative Research. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ERSH 8410 or permission of department.
Theoretical, ethical, and practical issues involved in transforming qualitative data into a written research report. Students, both in dissertation and pre-dissertation, will write representations of data they have already collected.

ERSH 8610. Educational Measurement Theory. 3 hours.
Prerequisite: ERSH 8320.
Theoretical basis of classical test theory: statistical treatment of reliability and validity; emphasis on application and interpretation of results through computer analyses.

ERSH 8620. Item Response Theory. 3 hours.
Prerequisite: ERSH 8610.
Models, statistical methods, and computer applications of item response theory (IRT) to educational and psychological test data.

ERSH 8630. Applications of Item Response Theory. 3 hours.
Prerequisite: ERSH 8620.
Applications of item response theory (IRT) to practical testing problems, including test equating, differential item functioning, computerized adaptive testing, and test construction. Dichotomous and polytomous item response theory models with strong emphasis on computer applications.

ERSH 8650. Generalizability Theory. 3 hours.
Prerequisite: ERSH 8610.
Application of generalizability theory to educational problems; emphasis on conducting and interpreting computer analyses and critiquing the research literature using generalizability theory; and use of generalizability for evaluating performance assessments.

ERSH 8700. Practicum in Educational Research. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: ERSH 8320.
Supervised experiences in educational research focusing on the planning, implementation, analysis, and response to scientific inquiries.

ERSH 8750. Exploratory and Confirmatory Factor Analysis. 4 hours.
Prerequisite: ERSH 8610.
Traditional exploratory factor analysis procedures and confirmatory factor analysis via covariance modeling. Relating educational measurement questions to conducting and interpreting computer analysis; critiquing research using exploratory/confirmatory factor analysis and research on the models themselves.

ERSH 8760. Structural Equation Modeling. 4 hours.
Prerequisite: ERSH 8750.
Structural equation modeling with observed and latent variables. Relating educational research problems to conducting and interpreting computer analysis; critiquing research using structural equation models and research on structural equation models.

ERSH 9210. Quantitative Design in Education. 3 hours.
Prerequisite: ERSH 8310.
Philosophical, ethical, and procedural aspects of experimental and nonexperimental research in education. Synthesizing and integrating previous research studies, designing quantitative inquiries, measuring outcomes and analyzing data.

ERSH 9700. Internship in Educational Research. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ERSH 8320.
Supervised experiences outside of the department in educational research; focusing on the planning, implementation, analysis, and reporting of scientific inquiries.

ERSH 9800. Issues in Qualitative and Quantitative Research. 1-3 hours. Repeatable for maximum 12 hours credit. 2-6 hours lab per week.
Prerequisite: Permission of major.
Current issues in qualitative and quantitative research methods. Methodological, substantive, and theoretical literature in the areas of measurement, qualitative design, and quantitative data analysis.

Elementary Education

Laurie E. Hart, *Head*
Penny Oldfather, *Graduate Coordinator,*
542-4244
(Aderhold Hall)

The Department of Elementary Education is a unit of the School of Teacher Education within the College of Education. The department offers MEd, EdS, and PhD degrees in early childhood education and middle school education. Additionally, the department offers a PhD degree in elementary education. Those who have undergraduate degrees in other fields may earn initial teaching certification with a masterís degree through special options in either the early childhood or middle school programs. The programs in the department are approved by the National Council for the Accreditation of Teacher Education (NCATE) and by the Georgia Professional Standards Commission. The PhD degree in Middle School Education is one of the few programs in the United States that is NMSA/NCATE-approved.

The department's teaching mission is to prepare students for teaching positions in prekindergarten settings, elementary schools, and middle schools, for leadership positions in school systems, business, or government; and for faculty positions in colleges and universities. Programs of study for masters and specialist students include required coursework and experiences developed in consultation with the student's academic advisor.

Doctoral programs provide for a student's future career goals and activities by fostering development in collegiate teaching and research activities that augment the knowledge base in education at the theoretical or the practical level. Each doctoral program is individually planned for a particular student. Course work and practical experiences are adapted in terms of the candidate's unique needs and interests. Faculty in elementary education have been consistently cited for excellence in teaching and research. The department sponsors teaching and research assistantships.

Early Childhood Education

(EDEC)(EDEL)EDMS(ELAN) 5180/7180. Understanding Cultural and Linguistic Diversity in Schools. 2 hours.
Not open to students with credit in ELAN 5040.
Undergraduate prerequisite: Permission of department.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L.
Influences of cultural pluralism on American education. Characteristics of culturally and linguistically di-

verse groups and the relationship among language, culture, and learning. Development of culturally responsive teaching strategies.

(EDEC)(EDEL)EDMS(ELAN) 5180L/7180L. Understanding Cultural and Linguistic Diversity in Schools Laboratory. 2 hours. 4 hours lab per week.
Not open to students with credit in ELAN 5040.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180/7180.
On-site in Mexico or other Spanish-speaking countries in Latin America, immersion in the country's social, cultural, and educational environments. Visits to schools and social agencies; discussion with preservice and inservice educators, and development of conversational Spanish abilities.

EDEC 6000. Special Problems in Early Childhood Education. 1-3 hours. Repeatable for maximum 6 hours credit.
Library investigation or the collection and analysis of original data pertinent to a given problem.

EDEC 6990. Research Seminar in Early Childhood Education. 3 hours.
Literature and research related to early childhood education. Emphasis will be placed on locating, evaluating, and interpreting research.

EDEC(EDMS) 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Research while enrolled for a master's program under the direction of faculty members.

EDEC 7010. Trends and Issues in Early Childhood Education. 3 hours.
Current and past trends and issues in the education of children in prekindergarten through grade five.

EDEC 7020. Theory and Curriculum in Early Childhood Education. 3 hours.
Theory and curricula in early childhood education.

EDEC 7050. Teaching in Elementary Schools (P-5). 3 hours.
Use of problem-solving techniques in teaching and to develop a repertoire of strategies.

(EDEC)EDMS 7060. Academic Community Learning. 3 hours.
History, rationale, research, methodology, and outcomes of service learning. Students will conceptualize, plan, and participate in a service learning project. Emphasis is on how service can be incorporated into curriculum with a primary focus on learning.

EDEC 7110. The Educational Role of Play in Early Childhood Education. 3 hours.
The cognitive and affective aspects of the play of children in prekindergarten through grade five. Techniques for facilitating children's play.

EDEC(EDMS) 7120. Children's Social Lives. 3 hours.
Race, gender, and class as explanatory frameworks for incidents in young children's everyday lives and approaches for culturally responsive teaching.

EDEC(EDMS) 7130. Teaching Styles in the Elementary Classroom. 3 hours.
Theoretical foundations of selected teaching styles, including the planning and developing of teaching strategies which reflect these styles.

EDEC 7160. Instructional Strategies for Early Childhood Education. 3 hours.
Curricular approaches and research on instructional strategies to meet the needs of children in prekindergarten through grade five.

EDEC 7170. Evaluation of the Elementary School. 3 hours.
Components of evaluation, appropriate evaluation techniques, procedures, collection, and utilization of research data for improving elementary schools.

EDEC 7190. Educational Environments for Young Children: Birth-Eight. 3 hours.
Implementing appropriate practices in early education environments for children from birth to age 8. Analysis of recent research, theoretical developments, and social issues relevant to the construction of quality care and education settings and their relationship to children's personal, social, and academic development.

EDEC 7200. Developmental Issues of Elementary School Learners. 3 hours.
Implications of developmental issues in children grades Pre-K through 5. Focus on the elementary school teacher's role in fostering the development of the whole child in the school context.

EDEC 7420. Organization and Management of Early Childhood Classrooms. 3 hours.
Principles and practices that are germane to organizing and operating the classroom for learners in prekindergarten through grade five. Students will acquire knowledge of important theoretical approaches in this area as well as practical skills applicable to their work with young children.

EDEC 7460. Internship in Teaching Early Childhood Education. 3-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
A prekindergarten through grade five classroom teaching experience under the direction of a teacher and an early childhood education faculty member.

EDEC 7650. Literature Review in Early Childhood Education. 3 hours.
Prerequisite: EDEC 6990.
Preparation of a literature review on a topic of interest related to early childhood education.

(EDEC)EDMS 8010. Teacher Action Research. 3 hours.
Prerequisite: Permission of department.
Teacher action research at the classroom, team, school, and inter-school levels.

EDEC(EDMS) 8020. Self-Instruction for Classroom Processes. 3 hours.
Prerequisite: EDMS 7080.
Theoretical and research backgrounds of self-instruction (SI) to improve memory, comprehension, problem-solving, and behavioral self-control of both elementary (K-8) teachers and students. Includes teacher introspection, classroom strategies, and management.

EDEC(EDMS) 8050. Theory and Research on Teaching. 3 hours.
Research on teaching, including teachers' thought processes, students' thought processes, effective teacher behavior, classroom organization, and classroom discourse.

(EDEC)EDMS 8070. Research and Perspectives on Teacher Education: PreK-Grade8. 3 hours.
The history of teacher education, the process of becoming a teacher, and approaches to teacher education.

EDEC(EDMS) 8100. Theories and Research on Teachers' Thinking. 3 hours.
Knowledge and self-regulation of teachers' thinking about their own cognitive, social, emotional, and physical development in classrooms. Theoretical considerations, relevant research, and applied practice.

EDEC(EDMS) 8110. Methods for Observing Children in Schools. 3 hours.
Process of designing and conducting observational methods projects. Observing children in natural habitats, such as school and community. Topics include entering the field, forming categories, sampling and recording rules, measurement, reliability, and validity.

EDEC(EDMS) 8120. Social Constructivist Approaches to Understanding Classroom Motivation. 3 hours.
Constructs of motivation; how classroom cultures, ways of knowing, particular pedagogies, and assessment practices affect student motivation; qualitative methods accessing perspectives on motivation.

EDEC(EDMS) 8140. Cross-Cultural Perspectives on Learning Environments for Children and Young Adolescents. 3 hours.
Cross-cultural perspectives on such topics as the social construction of learning, cultural perspectives on development, and institutionalized patterns of instruction drawn from developed and developing countries.

EDEC(EDMS) 8150. Research and Theory in Family-School-Community Interactions. 3 hours.
Interactive relationships among families, schools, and communities from the interdisciplinary perspectives of anthropology, education, sociology, history, political science, and psychology.

EDEC(EDMS) 8180. Research in Multicultural Teacher Education. 3 hours.
Multicultural teacher education research, theories, and practices. Opportunities to construct understandings of the political and economic context within which decisions are made, the effect of values on multiple realities, the dominant forces in society, and the impact of culture on the individual in teacher education contexts.

EDEC(EDMS) 8190. Mentoring in Learning to Teach. 3 hours.
Description, analysis, and appraisal of mentoring for pre-service and in-service teachers, and an examination of content, processes, roles, and responsibilities in interactions of mentors and teachers of prekindergarten through grade eight.

EDEC 8200. Early Educational Intervention for Young Children Placed At-Risk. 3 hours.
Prerequisite: EDEC 7020.
Analysis of recent research, theoretical developments, and social issues relevant to the determinants of the at-risk classification of young children and their families. Child, family, and societal roles in early educational intervention are examined with a focus on the efficacy of particular early education intervention models.

EDEC 8201. Social, Economic, and Political Perspectives in the Education of Young Children: Birth to 8 years. 3 hours.
Critical analysis of the social, economic, and political trends in the education of very young children, birth to age 8. Examination of state and national public policy, and social and political movements and the resulting influence on the care and education of young children.

EDEC 8990. Research Seminar in Early Childhood Education. 2 hours. Repeatable for maximum 4 hours credit.
Seminars on topics related to early childhood education.

EDEC 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EDEC 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EDEC 9600. Educational Research in Early Childhood Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent research in the area of early childhood education under the direction of faculty.

EDEC 9630. Critique of Educational Literature in Early Childhood Education. 3 hours.
Prerequisite: ERSH 6300 and ERSH 7400.
Interpretation and evaluation of research and theoretical writing in early childhood education.

EDEC 9800. University Teaching Practicum in Early Childhood Education. 1-9 hours.
University teaching experience under the direction of a tenured faculty member noted for outstanding university teaching.

Elementary Education

(EDEL)(EDEC)EDMS(ELAN) 5180/7180. Understanding Cultural and Linguistic Diversity in Schools. 2 hours.
Not open to students with credit in ELAN 5040.
Undergraduate prerequisite: Permission of department.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L.
Influences of cultural pluralism on American education. Characteristics of culturally and linguistically diverse groups and the relationship among language, culture, and learning. Development of culturally responsive teaching strategies.

(EDEL)(EDEC)EDMS(ELAN) 5180L/7180L. Understanding Cultural and Linguistic Diversity in Schools Laboratory. 2 hours. 4 hours lab per week.
Not open to students with credit in ELAN 5040.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180/7180.

On-site in Mexico or other Spanish-speaking countries in Latin America, immersion in the country's social, cultural, and educational environments. Visits to schools and social agencies; discussion with preservice and inservice educators, and development of conversational Spanish abilities.

EDEL 8990. Research Seminar in Elementary Education. 1-6 hours. Repeatable for maximum 12 hours credit.
Seminars on topics related to elementary education.

EDEL 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EDEL 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EDEL 9600. Educational Research in Elementary Education. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent research in elementary education under the direction of faculty.

EDEL 9630. Critique of Educational Literature in Elementary Education. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ERSH 4200/6200.
Critical interpretation and evaluation of research and theoretical writing in elementary education.

Middle School Education

EDMS(EDEC)(EDEL)(ELAN) 5180/7180. Understanding Cultural and Linguistic Diversity in Schools. 2 hours.
Not open to students with credit in ELAN 5040.
Undergraduate prerequisite: Permission of department.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L.
Influences of cultural pluralism on American education. Characteristics of culturally and linguistically diverse groups and the relationship among language, culture, and learning. Development of culturally responsive teaching strategies.

EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L. Understanding Cultural and Linguistic Diversity in Schools Laboratory. 2 hours. 4 hours lab per week.
Not open to students with credit in ELAN 5040.

Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180/7180.
On-site in Mexico or other Spanish-speaking countries in Latin America, immersion in the country's social, cultural, and educational environments. Visits to schools and social agencies; discussion with preservice and inservice educators, and development of conversational Spanish abilities.

EDMS 6000. Special Problems in Middle School Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Independent study of educational problems related to middle school education.

EDMS 6990. Research Seminar in Middle School Education. 3 hours.
Prerequisite: Permission of department.
Literature and research related to the middle school.

(EDMS)EDEC 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Research while enrolled for a master's program under the direction of faculty members.

EDMS 7030. The Middle School. 3 hours.
Research supporting the concept of a separate organization and program for youngsters ten to fourteen years of age, types of curricular plans for the middle school, aspects of teaching in the middle school, and the organization and staff of the middle school.

EDMS 7050. Teaching Young Adolescents. 3 hours.
Examines literature about research and practice to develop a repertoire of teaching strategies for young adolescents.

EDMS(EDEC) 7060. Academic Community Learning. 3 hours.
History, rationale, research, methodology, and outcomes of service learning. Students will conceptualize, plan, and participate in a service learning project. Emphasis is on how service can be incorporated into curriculum with a primary focus on learning.

EDMS 7080. Curriculum Planning for the Middle School. 3 hours.
Curriculum development based on the unique nature of the middle school learner and content appropriate to physical, intellectual, and emotional development.

EDMS 7090. Instructional Strategies for the Middle School. 3 hours.
Instructional strategies to meet unique needs of early adolescents, curricular approaches as related to instructional strategies and program development, major curricular models, and research on instructional strategies for the middle school.

EDMS 7100. Evaluation of the Middle School. 3 hours.
Needs for evaluation of middle school, components of evaluation, types of appropriate evaluation techniques, procedures, and utilization of research data for improving middle schools.

(EDMS)EDEC 7120. Children's Social Lives. 3 hours.
Race, gender, and class as explanatory frameworks for incidents in young children's everyday lives and approaches for culturally responsive teaching.

(EDMS)EDEC 7130. Teaching Styles in the Elementary Classroom. 3 hours.
Theoretical foundations of selected teaching styles, including the planning and developing of teaching strategies which reflect these styles.

EDMS 7460. Internship in Middle School. 1-9 hours.
Prerequisite: Permission of department.
Supervised professional laboratory experience in a selected middle school under the direction of a faculty member.

EDMS 7650. Literature Review in Middle School Education. 3 hours.
Prerequisite: EDMS 6990.
Preparation of a literature review on a topic related to middle school education.

EDMS(EDEC) 8010. Teacher Action Research. 3 hours.
Prerequisite: Permission of department.
Teacher action research at the classroom, team, school, and inter-school levels.

(EDMS)EDEC 8020. Self-Instruction for Classroom Processes. 3 hours.
Prerequisite: EDMS 7080.
Theoretical and research backgrounds of self-instruction (SI) to improve memory, comprehension, problem-solving, and behavioral self-control of both elementary (K-8) teachers and students. Includes teacher introspection, classroom strategies, and management.

(EDMS)EDEC 8050. Theory and Research on Teaching. 3 hours.
Research on teaching, including teachers' thought processes, students' thought processes, effective teacher behavior, classroom organization, and classroom discourse.

EDMS(EDEC) 8070. Research and Perspectives on Teacher Education: PreK-Grade8. 3 hours.
The history of teacher education, the process of becoming a teacher, and approaches to teacher education.

(EDMS)EDEC 8100. Theories and Research on Teachers' Thinking. 3 hours.
Knowledge and self-regulation of teachers' thinking about their own cognitive, social, emotional, and physical development in classrooms. Theoretical considerations, relevant research, and applied practice.

(EDMS)EDEC 8110. Methods for Observing Children in Schools. 3 hours.
Process of designing and conducting observational methods projects. Observing children in natural habitats, such as school and community. Topics include entering the field, forming categories, sampling and recording rules, measurement, reliability, and validity.

(EDMS)EDEC 8120. Social Constructivist Approaches to Understanding Classroom Motivation. 3 hours.
Constructs of motivation; how classroom cultures, ways of knowing, particular pedagogies, and assessment practices affect student motivation; qualitative methods accessing perspectives on motivation.

(EDMS)EDEC 8140. Cross-Cultural Perspectives on Learning Environments for Children and Young Adolescents. 3 hours.
Cross-cultural perspectives on such topics as the social construction of learning, cultural perspectives on development, and institutionalized patterns of instruction drawn from developed and developing countries.

(EDMS)EDEC 8150. Research and Theory in Family-School-Community Interactions. 3 hours.
Interactive relationships among families, schools, and communities from the interdisciplinary perspectives of anthropology, education, sociology, history, political science, and psychology.

(EDMS)EDEC 8180. Research in Multicultural Teacher Education. 3 hours.
Multicultural teacher education research, theories, and practices. Opportunities to construct understandings of the political and economic context within which decisions are made, the effect of values on multiple realities, the dominant forces in society, and the impact of culture on the individual in teacher education contexts.

(EDMS)EDEC 8190. Mentoring in Learning to Teach. 3 hours.
Description, analysis, and appraisal of mentoring for pre-service and in-service teachers, and an examination of content, processes, roles, and responsibilities in interactions of mentors and teachers of prekindergarten through grade eight.

EDMS 8990. Research Seminar in Middle School Education. 1-6 hours. Repeatable for maximum 12 hours credit.
Seminars on topics related to middle school education.

EDMS 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EDMS 9030. Young Adolescents and Schools. 3 hours.
Adolescence as a historical and cultural concept, research on middle school practices and students' perspectives of schooling, and adolescents' experiences in school and society.

EDMS 9080. Theory and Practice in Middle Grades Curriculum. 3 hours.
Current curricular practices in the middle grades, theories on curriculum development, and research on curriculum implementation.

EDMS 9090. Socio-Cultural Issues in Early Adolescence. 3 hours.
Social construction of adolescence from a historical and cultural viewpoint, including cross-cultural research on the dynamics of adolescent development.

EDMS 9120. Comparative and International Perspectives in Middle Grades Education. 3 hours.
Common issues and problems in the education of young adolescents and the current predicaments of adolescent education.

EDMS 9150. School Reform and Young Adolescents. 3 hours.
School reforms and shifts in educational paradigms related to young adolescent development and the schooling of young adolescents from the 1870s to the present.

EDMS 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EDMS 9600. Educational Research in Middle School Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Independent research in middle school education under the direction of faculty.

EDMS 9630. Critique of Literature in Middle School Education. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ERSH 6300 and ERSH 7400.
Interpretation and evaluation of research and theoretical writing in middle school education.

Health and Human Performance

Douglas A. Kleiber, *Director*
(Ramsey Student Center)

Within the School, graduate study is offered in the following areas: exercise science (MEd, EdD, PhD), health promotion and behavior (MEd, PhD), physical education and sport studies (MEd, EdS, EdD, PhD), and recreation and leisure studies (MEd, EdD). Students may pursue a master's degree with the thesis option through the Master of Arts in education degree.

Exercise Science

Kirk J. Cureton, *Head*
Ted A. Baumgartner, *Graduate Coordinator,*
542-4424
(Ramsey Student Center)

EXRS 4200/6200-4200L/6200L. Biomechanics I. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CBIO 2200-2200L and (PHYS 1111-1111L or PHYS 1211-1211L) and permission of school.
Graduate prerequisite: Permission of school.
Mechanical principles to human movement, equipment design, and injury.

EXRS 4300/6300. Exercise Epidemiology. 3 hours.
Undergraduate prerequisite: CBIO 2200-2200L and CBIO 2210-2210L and permission of major.
Graduate prerequisite: Permission of school.
Health-related aspects of exercise, physical activity, and physical fitness from the perspective of epidemiology. Biological mechanisms for healthy adaptations to physical activity and the behavioral determinants of exercise participation.

EXRS 4310/6310. Physical Fitness Programs. 3 hours.
Undergraduate prerequisite: Permission of school.
Physical fitness programs for adults and special populations. Topics include program goals and objectives, principles and methods of physical fitness development and testing, evaluation of existing programs, and administrative and programming considerations.

EXRS 4320/6320. Exercise and Aging. 3 hours.
Undergraduate prerequisite: EXRS 4630/6630-4630L/6630L and permission of school.
Biological and psychological effects of aging in relation to physical activity and exercise.

EXRS 4400/6400. Exercise and Sport Psychology. 3 hours.
Undergraduate prerequisite: PSYC 1101 and CBIO 2200-2200L and CBIO 2210-2210L and permission of major.
Graduate prerequisite: Permission of school.
Effects of participating in exercise and sport on psychological traits and states. Cognitive and neurobiological mechanisms and psychological limitations to athletic performance.

EXRS 4630/6630-4630L/6630L. Exercise Physiology I. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CBIO 2200-2200L and CBIO 2210-2210L and permission of major.
Graduate prerequisite: Permission of school.
Physiological effects of human physical activity. Neuromuscular, cardiovascular, respiratory, metabolic, hormonal, and thermal responses and adaptations to exercise.

EXRS 4690/6690-4690L/6690L. Exercise Physiology II. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: EXRS 4630/6630-4630L/6630L and permission of school.
Graduate prerequisite: Permission of school.
Mechanics, energetics, and motor unit recruitment during skeletal muscle contraction; regulation of energy metabolism during exercise; mechanisms underlying oxygen delivery to muscle during exercise.

EXRS 6000. Problems in Exercise Science. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of school.
Independent study in exercise science.

EXRS 6130-6130L. Athletic Training Emergency Care. 3 hours. 2 hours lecture and 2 hours lab per week.
The basic principles of emergency medical care focused on athletic injuries. This is a comprehensive

course for the athletic trainer who must initially evaluate and stabilize an athlete in a trauma situation. Using a lecture/laboratory format, rapid assessment, resuscitation, packaging and transportation of the injured athlete are taught.

EXRS 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of school.
Research while enrolled for a master's degree under the direction of faculty members.

EXRS 7140. Current Problems in Exercise Science. 1-3 hours. Repeatable for maximum 6 hours credit.
Intensive study of a timely problem in exercise science.

EXRS(HPRB)(PEDS)(RLST) 7150. Research Methods in Health and Human Performance. 3 hours.
Application of research to exercise science, health promotion and behavior, physical education, and recreation and leisure studies, with experience in developing techniques of gathering, analyzing, and reporting data.

EXRS 7160. Advanced Measurement in Exercise Science. 3 hours.
Prerequisite: Permission of school.
Current tests in exercise science; principles of test construction for physical performance, knowledge, and behavior tests; tools for evaluation of tests and the use of laboratory instruments in performance measurement.

EXRS 7180. Measuring Psychological Constructs. 3 hours.
Prerequisite: Permission of school.
Scale construction and methods for assessing psychological constructs of relevance to exercise scientists, such as anxiety, body image, depression, mood, perceived exertion, personality, pain, and self-concept.

EXRS 7210. Motor Learning and Control. 3 hours.
Analysis of the scholarly literature on the learning, memory, and control of motor skills with appropriate laboratory experiences.

EXRS 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of school.
Thesis writing under the direction of the major professor.

EXRS 7310-7310L. Adult Fitness and Cardiac Rehabilitation. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: Permission of school.
Knowledge and skills required to conduct adult fitness, cardiac rehabilitation, and other clinical exercise programs. Special emphasis is placed on graded exercise testing with electrocardiogram interpretation as it relates to exercise prescription.

EXRS 7330-7330L. Metabolic and Cardiorespiratory Aspects of Exercise. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of school.
Metabolic and cardiovascular-respiratory responses to exercise and adaptations to training, with emphasis on applications to human physical performance and fitness.

EXRS 7340-7340L. Exercise Psychology. 3 hours. 2 hours lecture and 2 hours lab per week.
Relation of physical activity and physical fitness to stress and mental health, explanatory models of exercise patterns, and exercise psychology assessment experiences.

EXRS 7350. Biomechanics of Human Movement. 3 hours.
Prerequisite: Permission of school.
Laws and principles of mechanics applied to human movement.

EXRS 7800. Practicum in Exercise Science. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of school.
Supervised participation in programs or research in exercise science.

EXRS 8200. Meta-Analysis in Health and Human Performance. 3 hours.
Prerequisite: ERSH 8310 or permission of school.
Statistical techniques for the quantitative analysis and review of a scientific literature. Meta-analytic studies in the health and human performance literature are critiqued.

EXRS 8210. Advanced Topics in Motor Learning and Control. 3 hours.
Prerequisite: EXRS 7210 or permission of school.
Reading, discussion, and laboratory investigation of special topics in motor learning and control.

EXRS 8300-8300L. Advanced Topics in Exercise Physiology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: EXRS 7330-7330L or permission of school.
Reading, discussion, and laboratory investigation of special topics in exercise physiology.

EXRS 8320. Laboratory Experiences in Human Neuromuscular Function. 4 hours. 8 hours lab per week.
Prerequisite: [EXRS 7330-7330L and (VPHY 6090 or PHRM 6400)] or permission of school.
Laboratory investigation and discussion of current methods for evaluating human neuromuscular function and biochemistry in relation to physical performance. Emphasis will be on evaluating muscle function with voluntary and transcutaneous electrical stimulation, and on evaluating the delivery and utilization of oxygen in exercising muscle.

EXRS 8340. Seminar in Exercise Psychology. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: (EXRS 7340-7340L and PSYC 6910) or permission of school.
Reading and discussion of current topics of investigation in the psychological and behavioral aspects of exercise and health-related physical fitness.

EXRS 8350. Methods in Biomechanics. 1-3 hours. Repeatable for maximum 7 hours credit. 1-3 hours lab per week.
Prerequisite: EXRS 7350 or permission of school.
Methods in human movement biomechanics, including electromyography, motion measurement, kinetic analyses, modeling, and anthropometry.

EXRS 8410. Neuromuscular Mechanisms in Exercise. 3 hours.
Prerequisite: [EXRS 7330-7330L and (PHRM 6400 or VPHY 6090)] or permission of school.
Reading and discussion of current topics of investigation in the relationship between the nervous system and skeletal muscle as it pertains to exercise and training, with emphasis on neural regulation of muscle phenotype, muscle force and shortening velocity.

EXRS 8420. Muscle Energetics and Oxygen Transport During Exercise. 3 hours.
Prerequisite: [EXRS 7330-7330L and (VPHY 6090 or PHRM 6500)] or permission of school.
Reading and discussion of current topics in skeletal muscle biochemistry and oxygen transport relating to exercise. Topics will include contractile protein energetics, ATP production pathways, blood flow to muscle, and oxygen delivery. Emphasis will be placed on acute changes with exercise, and plasticity of skeletal muscle in response to increases and decreases in physical activity.

EXRS 8990. Research Seminar in Exercise Science. 1-2 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of school.
Methods and current research in exercise science.

EXRS 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of school.
Research while enrolled for a doctoral degree under the direction of faculty.

EXRS 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of school.
Dissertation writing under the direction of the major professor.

EXRS 9630. Directed Reading in Exercise Science. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of school.
Critical evaluation of reported research on a specialized topic in exercise science.

Health Promotion and Behavior

Stuart W. Fors, *Head*
Mark G. Wilson, *Graduate Coordinator,*
542-4364
(Ramsey Student Center)

HPRB 4000/6000. Special Problems in Health Promotion and Behavior. 1-6 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Independent study of selected topics.

HPRB 4450/6450. Occupational Safety. 3 hours.
The specific areas and the broad scope in methods, materials, and problems in occupational safety programming with special emphasis on organization and implementation of injury prevention and control techniques.

(HPRB)SPCM 4610/6610. Health Communication. 3 hours.
Communication about health with physicians and other providers, within support groups and health care organizations, and by public figures, groups, and organizations.

HPRB 5060/7060. Educational Strategies in Human Sexuality. 3 hours.
Theory and practice of sexuality education; basic issues, philosophy, and guiding principles; legal implications; needs, justification, and objectives; curriculum critique for school and community programs; content knowledge, resource materials; acceptable methods to approach controversial topics.

HPRB 5160/7160. Special Topics in Health Promotion and Behavior. 1-3 hours. Repeatable for maximum 6 hours credit.
Selected health problems or issues, with emphasis on epidemiology, etiology, and the development and evaluation of prevention measures.

HPRB 5210/7210. The Effects of Drug Use and Abuse. 3 hours.
Social, moral, psychological, and physiological causes and effects of drug use and abuse. Individual, family, and community factors related to prevention and treatment.

HPRB 6040. Use of Epidemiologic Data in Health Promotion and Behavior. 3 hours.
The etiology of various health problems, with focus on using this knowledge for planning preventive programs. The principles, uses, techniques, and language of epidemiology and epidemiological method.

HPRB 6420. Health Education in Early Childhood Education. 2 hours.
Contemporary issues and trends in curriculum and methods for Early Childhood Health Education. Emphasis is on the role of the classroom teacher in the comprehensive school health program.

HPRB 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

HPRB 7070. Planning and Evaluation in Health Education and Health Promotion. 3 hours.
Planning, implementation, and evaluation of health education and health promotion programs in a variety of community settings.

(HPRB)EXRS(PEDS)(RLST) 7150. Research Methods in Health and Human Performance. 3 hours.
Application of research to exercise science, health promotion and behavior, physical education, and recreation and leisure studies, with experience in developing techniques of gathering, analyzing, and reporting data.

HPRB 7170. Aging and Health. 3 hours.
Health promotion, risk reduction, health maintenance, and health problems of the elderly, from an individual, community, cultural, and policy perspective.

HPRB 7200. Women in Health and Illness. 3 hours.
Health and illness concerns of women throughout the life cycle, including the social, political, and cultural contexts of health and health care.

HPRB 7270. Resource Development and Program Implementation in Health Promotion and Education. 3 hours.
Prerequisite: HPRB 7070.
Managing human resources and implementing health education and health promotion programs.

HPRB 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

HPRB 7370. Social Marketing of Health: Theory and Process. 3 hours.
Prerequisite: HPRB 7070 or permission of department.
Social marketing theory and process applied to the marketing of health concepts, attitudes, and behaviors.

HPRB 7400. Worksite Health Promotion. 3 hours.
Prerequisite: HPRB 7070 or permission of department.
The interaction between human health and the work environment. The design, implementation, and evaluation of prevention and health promotion programs in business and industry.

HPRB 7460. Student Teaching in Health Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
In-school experience for graduate students who are completing initial teacher certification requirements in health education.

HPRB 7500. Community Health Promotion. 3 hours.
Prerequisite or corequisite: HPRB 7270 or permission of department.
The theoretical and conceptual foundations of community health promotion, the health care system, multicultural issues in community health, and the contribution of community-based organizations and coalitions to the health and well-being of individuals and the communities in which they reside.

HPRB 7560. Field Experience in Health Promotion and Behavior. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Practical experience in community or corporate health promotion/education through placement in an appropriate health agency, hospital, or worksite setting.

HPRB 7650. Applied Project in Health Promotion and Behavior. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.

Functional study of a topic that is related to the student's career objectives.

HPRB 7700. Analysis and Prevention of Injury and Violence. 3 hours.
Prerequisite: (HPRB 6040 and HPRB 7070) or permission of department.
Causes and consequences of injury and violence, with emphasis on prevention research and program development.

HPRB 7920. Health Behavior. 3 hours.
Prerequisite: (HPRB 6040 and HPRB 7070) or permission of department.
Behavioral science theories and models used in health promotion and health education.

HPRB 8000. Directed Study in Health Promotion and Behavior. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Individual study under the direction of a department faculty member.

HPRB 8410. Human Ecology of Health and Illness. 3 hours.
Prerequisite: Permission of department.
Major causes of premature disability and death and the relationship of health-related behavior to these problems. Challenges related to hard-to-reach populations, social isolation, economics, health policy, and lack of trust.

HPRB 8420. Theory and Research in Health Behavior. 3 hours.
Prerequisite: (HPRB 7920 and HPRB 8410) or permission of department.
Theoretical and conceptual foundations of health-related behavior. The development, change, and maintenance of these behaviors from a bio-behavioral perspective; needs and concerns of under-served and under-represented segments of the population.

HPRB 8430. Intervention and Evaluation of Health Promotion and Disease Prevention. 3 hours.
Prerequisite: (HPRB 7070 and HPRB 8420) or permission of department.
Intervention and evaluation strategies in health promotion and disease prevention at the individual, group, and community levels.

HPRB 8990. Research Seminar in Health Promotion and Behavior. 1-3 hours. Repeatable for maximum 5 hours credit.
Prerequisite: Permission of department.
Literature in health promotion and education, health behavior, health communications, and instructional design; research design; data analysis; and development of research proposals.

HPRB 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

HPRB 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

HPRB 9630. Critique of Literature in Health Promotion and Behavior. 3 hours.
Prerequisite: Permission of department.
Critical interpretation and evaluation of research and theoretical writing.

Physical Education and Sport Studies

Paul G. Schempp, *Head and Graduate Coordinator,* 542-4455
(Ramsey Student Center)

Within the department are three areas of study including, sport management, sport studies, and curriculum and instruction.

PEDS 4300/6300-4300L/6300L. Physical Education for the Elementary School. 3 hours. 2 hours lecture and 2 hours lab per week.
Curriculum, methods, and evaluation strategies for teaching physical activities in kindergarten through 6th grade. Students will plan lessons and teach groups of students in elementary school physical education classes.

PEDS 4330/6330-4330L/6330L. Physical Education for the Middle/Secondary School. 3 hours. 2 hours lecture and 2 hours lab per week.
Curriculum, methods, and evaluation strategies for teaching physical activities in grades 7 through 12. Students will plan lessons and teach groups of students in both middle and high school physical education classes.

PEDS 4610/6610-4610L/6610L. Adapted Physical Education. 3 hours. 2 hours lecture and 3 hours lab per week.
The nature, behavioral characteristics, and motor limitations of various exceptional populations with methods of preparing meaningful individualized movement

experiences in an integrated, segregated, or hospital/home bound setting. Includes planning lessons and teaching individuals in a clinic setting.

PEDS 5050/7050. Problems of Teaching in Physical Education. 1-3 hours. Repeatable for maximum 3 hours credit.
Undergraduate prerequisite: Permission of department.
Contemporary problems and issues facing the physical education teaching profession.

PEDS 5140/7140. Current Problems in Physical Education and Sport Studies. 1-3 hours. Repeatable for maximum 3 hours credit.
Seminars on issues and problems in Physical Education and Sport Studies.

PEDS 5250/7250. Gender and Sport. 3 hours.
Political, social, and cultural factors which have influenced the participation of women in sport and physical activity.

PEDS 6000. Directed Study in Physical Education and Sport Studies. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research project in physical education and sport studies.

PEDS 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

PEDS 7040. Instructional Strategies in Physical Education. 3 hours.
Instructional strategies for the purpose of improving teaching effectiveness in physical education and increasing the student's repertoire of teaching strategies.

PEDS 7060. Human Diversity in Curriculum and Instruction. 3 hours.
Theoretical and practical perspectives on diversity. Specific foci include social and cultural diversification in school institutions, and culturally responsive curriculum and pedagogy.

PEDS 7070. Movement Education for the Elementary School. 3 hours.
Definition, conceptual framework and theory of movement education. Simulated and/or actual teaching situations are analyzed and a movement education program is planned for schools.

PEDS 7080. Curriculum Planning in Physical Education. 3 hours.
Problems of curriculum design and development in physical education.

PEDS 7090. Applications of Technology to Physical Education and Sport Studies. 1 hour. Repeatable for maximum 4 hours credit.
Role of technology in the instructional process in physical education. Characteristics of technological delivery systems and selection of appropriate technology to fit instructional needs.

PEDS 7100. Motor Development. 3 hours.
Development of fundamental motor skills from childhood to old age with emphasis on concomitant physiological and motor skill stages of development.

PEDS 7120. Analysis of Teaching Physical Education. 3 hours.
Process of utilizing descriptive-analytic techniques in the analysis of physical education. Emphasis on systematic observation as employed in supervision, research, and self-evaluation of teaching.

PEDS 7130. Administration of Physical Education. 3 hours.
Program planning, budgeting, care and maintenance of equipment and facilities, personnel management, and program evaluation in physical education.

(PEDS)EXRS(HPRB)(RLST) 7150. Research Methods in Health and Human Performance. 3 hours.
Application of research to exercise science, health promotion and behavior, physical education, and recreation and leisure studies, with experience in developing techniques of gathering, analyzing, and reporting data.

PEDS 7200. Administration of Sport. 3 hours.
Past and present management trends, major management functions, personnel management, and leadership in sport organizations.

PEDS 7210. Sport and the Mass Media. 3 hours.
The economic structure of media and sport. Print and electronic media's representation of sport. Theories and methodologies for exploring the relationship between media and sport.

PEDS 7220. Sport and Society. 3 hours.
Sport in the American culture and its impact on society.

PEDS 7230. Sport History. 3 hours.
The development of sport in a variety of cultures and how sport reflects the social, economic, political, religious, and philosophical views of a culture.

PEDS 7240. Psychosocial Aspects of Sport. 3 hours.
Psychological and sociological processes that affect the individual participating in sport.

PEDS 7260. Legal Issues in Sport Management. 3 hours.
Influence of constitutional state and federal laws on sport organizations and athletes.

PEDS 7270. Facility Design and Event Management in Sport. 3 hours.
Planning, design, financing, construction, and management of sport facilities. Planning, organizing, and evaluating the management of sporting events.

PEDS 7280. Sport Marketing. 3 hours.
Marketing of sport events and service to consumers of sport. Planning and organization of appropriate marketing strategies.

PEDS 7290. Managerial Operations in Sport. 1 hour.
Business and managerial operations in intercollegiate and professional sport including budget development and control, financial analysis, taxation issues, insurance considerations, and application of computers.

PEDS 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

PEDS 7310. Ethics in Sport Management. 1 hour.
Ethical decision making in sport management. Development and application of a code of ethics for decision making in sport management.

PEDS 7320. Student Athlete in Higher Education. 1 hour.
Role conflict the student athlete experiences between academic responsibilities and athletic demands. Development of support programs to assist the student athlete.

PEDS 7330. Governance in Sport Organizations. 1 hour.
Structure of various sport organizations and how they govern and control the conduct of sport at different levels.

PEDS 7340. Technology in Sport Management. 1 hour. 2 hours lab per week.
Use of the latest technology and computer programs in sport management.

PEDS 7350. Compliance in Intercollegiate Athletics. 1 hour.
Issues surrounding compliance with the NCAA Rulebook with interpretation and enforcement of NCAA rules.

PEDS 7400. Practicum in Physical Education and Sport Studies. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Supervised participation in professional activities associated with physical education and sport studies.

PEDS 7450. Internship in Sport Management. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Work experience in a sport organization under an on-site professional and supervised by a faculty member.

PEDS 7460. Internship in Physical Education for Certification. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Full time work experience in physical education in a school setting under an on-site professional and supervised by a faculty member.

PEDS 7470. Internship in Physical Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Full-time work experience in physical education in an off-campus setting supervised by a faculty member.

PEDS 7610. Physical Rehabilitation of Children with Disabilities. 3 hours.
Etiology and remediation of disabilities caused by neurological, cardiorespiratory, sensory, and/or musculoskeletal and developmental anomalies as they relate to physical functioning. Responses to exercise and physical rehabilitation of children with disabilities.

PEDS(RLST) 7640. Developmental and Motor Assessment. 3 hours.
Prerequisite: PEDS 4610/6610-4610L/6610L.
Assessment and interpretation techniques for evaluating physical, motor, and recreational capabilities of individuals across the life span.

PEDS 7650. Applied Project in Physical Education and Sport Studies. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.

Topic or problem in physical education related to the student's professional interests.

PEDS 8040. Trends in Pedagogical Research. 3 hours. Repeatable for maximum 9 hours credit.
Research design and findings in pedagogical research with implications for teaching and further research.

PEDS 8210. Bases of Motor Control. 3 hours.
A neuropsychological approach to perceptual motor processes with emphasis on the role of the nervous system in controlling sensory and motor behavior.

PEDS 8630. Program Design in Physical Education. 3 hours.
Theories, concepts, and techniques for development, implementation, coordination, and evaluation of rehabilitation and training.

PEDS 8990. Research Seminar in Physical Education and Sport Studies. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Seminar for doctoral students to establish foundation for dissertation writing.

PEDS 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for the doctoral degree under the direction of a faculty member.

PEDS 9080. Curriculum Inquiry in Physical Education. 3 hours.
Prerequisite: PEDS 7080.
Curriculum theorizing in physical education. Application of criteria for theory-building to curriculum model building to use in physical education settings.

PEDS 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

PEDS 9600. Research in Physical Education and Sport Studies. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Independent study of a research topic in physical education and sport studies appropriate to the advanced graduate student's specialization.

PEDS 9630. Critique of Research Literature in Physical Education and Sport Studies. 3 hours.
Prerequisite: Permission of department.
Critical evaluation of reported research in the advanced graduate student's area of specialization in physical education and sport studies.

PEDS 9700. Internship in Physical Education and Sport Studies. 3 hours.
Prerequisite: Permission of department.
Work experience by an advanced graduate student utilizing a research design or experimental model.

Recreation and Leisure Studies

John P. Dattilo, *Head*
Diane Samdahl, *Graduate Coordinator,*
542-5064
(Ramsey Student Center)

(RLST)(ANTH)FORS 4271/6271. Field Studies in Natural Resources. 1-9 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Field studies to explore the management and conservation of natural resources with a focus on issues related to forestry, wildlife, ecology, recreation and tourism, geology, and/or coastal/water resources. The impact of humans on these resources will also be emphasized.

RLST 5130/7130. Leisure Education. 3 hours.
Undergraduate prerequisite: Permission of major.
Undergraduate prerequisite or corequisite: RLST 2800 and RLST 2800L.
Principles of educating for leisure. Review of techniques for enhancing leisure awareness, leisure attitudes, decision-making skills, and resource utilization. Emphasis is on the recreation professional's facilitative role in assisting individuals and groups to achieve satisfying lifestyles.

RLST 5320/7320. Women and Leisure. 3 hours.
Feminist critique of leisure traditions, including women's representation in leisure theories and services. Examines leisure as a context for hegemonic relationships.

RLST 5340/7340. Advanced Administrative Practices in Leisure Services. 3 hours.
Undergraduate prerequisite: RLST 4870 or permission of department.
Techniques in budgeting and finance, personnel management, facility management, and public relations, as well as organizational theory and legislative issues.

RLST(ANTH)(FORS) 5400/7400-5400L/7400L. Parks and Ecotourism Management. 3 hours. 2 hours lecture and 2 hours lab per week.
An introduction to the sustainable planning, development, and management of parks, protected areas and ecotourism, worldwide. Classroom lectures will be combined with a field trip, guest speakers, and a group case study to examine six key components of sustainable protected areas and ecotourism management.

(RLST)FORS 5410/7410. Wilderness Management. 3 hours.
Origins of the wilderness movement; wilderness values; scope of wilderness management as limited by laws and philosophy; principles of wilderness management; and review status and management of non-roaded natural areas.

RLST 5430/7430. Camping Administration. 3 hours.
Undergraduate prerequisite or corequisite: RLST 4870.
Camps with particular emphasis on program planning, selection and training of staff, campsite selection and development, health and safety, accessibility, and program evaluation.

RLST 6000. Special Problems in Recreation and Leisure Studies. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Specialized study in recreation and leisure studies. May involve intensive library investigation, collection and analysis of original data, or course work on a new topic with other students.

RLST 6020. Concepts of Leisure. 3 hours.
Leisure studies with special attention to problems in defining recreation, leisure, and play. The personal, societal, political, and environmental contexts in which leisure occurs are also examined.

RLST 6990. Research Seminar in Recreation and Leisure Studies. 1-2 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of major.
The philosophy and practice of basic and applied research in Recreation and Leisure Studies.

RLST 7000. Master's Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

(RLST)EXRS(HPRB)(PEDS) 7150. Research Methods in Health and Human Performance. 3 hours.
Application of research to exercise science, health promotion and behavior, physical education, and recreation and leisure studies, with experience in developing techniques of gathering, analyzing, and reporting data.

RLST 7290. Advanced Issues in Therapeutic Recreation. 3 hours.
Prerequisite: Permission of major.
Therapeutic recreation program development, design, and evaluation for persons with disabling conditions. Case studies, field trips, and volunteer experiences are utilized.

RLST 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

RLST 7380. Leisure and Aging. 3 hours.
Leisure behavior in later life with attention to programs and services for older adults in both community and institutional settings.

RLST 7500. Outdoor Recreation Resources Management. 3 hours.
Development of skills in planning, programming, management, and interpretation of outdoor recreation areas through lectures and field experiences.

(RLST)PEDS 7640. Developmental and Motor Assessment. 3 hours.
Prerequisite: PEDS 4610/6610-4610L/6610L.
Assessment and interpretation techniques for evaluating physical, motor, and recreational capabilities of individuals across the life span.

RLST 7650. Applied Project in Recreation and Leisure Studies. 1-9 hours. Repeatable for maximum 15 hours credit.
A project which addresses a problem in recreation and leisure services that is significantly related to a student's professional goals.

RLST 7700. Internship in Recreation and Leisure Services. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Field placement in leisure service agency. Training in management of leisure programs and/or resources with agency and faculty supervision. Includes applied research project.

RLST 8000. Special Problems in Recreation and Leisure Studies. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Specialized study in recreation and leisure studies. May involve intensive library investigation, collection and analysis of original data, or course work on a new topic with other students.

RLST 8990. Doctoral Seminar in Recreation and Leisure Studies. 1 hour. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of major.
Topics of relevance to scholarship in recreation and leisure studies in higher education.

RLST 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

RLST 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

RLST 9330. Trends in Recreation and Leisure Research. 3 hours.
Trends in leisure research with attention to broader premises of scientific investigation.

RLST 9630. Critique of Literature in Recreation and Leisure Studies. 3 hours.
Contemporary literature in recreation and leisure studies.

RLST 9800. Teaching in Recreation and Leisure Studies. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Teaching in recreation and leisure studies with faculty supervision.

Higher Education

Libby V. Morris, *Interim Director and Graduate Coordinator,* 542-0580
(Meigs Hall)

EDHI(HIST) 4900/6900. History of American College and University. 3 hours.
Undergraduate prerequisite: HIST 2111 and HIST 2112.
History of American colleges and universities from 1619 to the present. Major topics include student life, European antecedents, the nature of the university, the impact of religion, the rise of athletics, the culture of collegiate life, and the influence of society.

EDHI 7650. Applied Project in Higher Education. 3 hours. Repeatable for maximum 6 hours credit.
Applied study of a topic or problem in higher education significantly related to the student's professional task.

EDHI(HIST) 8000. History of American Higher Education. 3 hours.
Development and scope of American higher education.

EDHI 8020. The Two-Year College. 3 hours.
Purposes, policies, and programs of two-year colleges.

EDHI 8200. Institutional Research. 3 hours.
Knowledge, skills, and competencies required to design, conduct, and interpret institutional studies in higher education.

EDHI 8300. The Law and Higher Education. 3 hours.
The legal aspects of higher education through pertinent court decisions affecting the administration of the institution, faculty, staff, and students.

EDHI 8400. Finance of Higher Education. 3 hours.
Financing and financial management in higher education, with particular attention to patterns of financial support and costs, tuition and financial aid, cost-effectiveness, budgeting, and financial decision making.

EDHI 8600. Assessment in Higher Education. 3 hours.
Methods and techniques used in assessing educational outcomes in colleges and universities. Analysis and interpretation of problems, issues, and concerns involved in public demands for assessment and accountability.

EDHI 8890. Seminar in Higher Education. 1-3 hours. Repeatable for maximum 12 hours credit.
Issues in teaching and learning in higher education. Topics are tailored to meet the needs of doctoral-level students preparing for academic posts across a variety of disciplines and instructional levels. Integrating technology in the classroom, instructional strategies, and assessing students and courses for improvement.

EDHI 8990. Research Seminar in Higher Education. 2 hours. Repeatable for maximum 4 hours credit.
Proposed student research projects and methods of data analysis.

EDHI 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EDHI 9010. Academic Programs in Higher Education. 3 hours.
General education and specialization in undergraduate education. Curricular trends, contemporary practices, persistent challenges, and external influences in the development of courses and programs in higher education.

EDHI 9020. Critical Issues in Higher Education. 3 hours. Repeatable for maximum 9 hours credit.
Critical problems and issues facing higher educational institutions, emphasizing the processes of change for improved administrative leadership and practice.

EDHI 9030. Instructional Processes in Higher Education. 3 hours.
Major instructional practices in higher education, including establishing course goals and objectives, selecting appropriate teaching methods, and evaluating learning outcomes.

EDHI 9040. Using Technology in the College Classroom. 2 hours.
Uses of technology when applied to college level instruction. Using e-mail, multi-media, distance learning, and other emerging tools to enhance student learning in higher education.

EDHI 9050. Organization and Governance in Higher Education. 3 hours.
Organization and governance in higher education, with special attention to the diversity of institutional types, relevant organizational theory, and the nature of change in colleges and universities.

EDHI 9100. The American Professoriate. 2 hours.
Nature of the American professoriate by way of historical, scholarly, popular, and contemporary perspectives. The transition of new faculty members from graduate school to the initial academic appointment.

EDHI 9200. Administrative Leadership in Higher Education. 3 hours.
Administrative leadership concepts, principles, and practices in United States colleges and universities. Interpretation and evaluation of theory and research in leadership, administration, and management.

EDHI 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 33 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EDHI 9400. Comparative Higher Education. 3 hours.
Higher education systems and institutions outside North America.

EDHI 9500. Policy Studies in Higher Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Analyzing, interpreting, and evaluating selected policy issues related to the continued improvement and development of institutions, programs, and services in higher education. Policy analysis and research at public and institutional levels.

EDHI 9630. Critique of Educational Literature in Higher Education. 2-6 hours. Repeatable for maximum 9 hours credit.
Critical interpretation and evaluation of theory and research. Each student will make critical reviews of scholarly studies in his/her field of specialization.

EDHI 9700. Internship in Higher Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Problems encountered in a work-study program applying higher education principles at a selected institution.

Instructional Technology

Robert C. M. Branch, *Head*
Janette R. Hill, *Graduate Coordinator,*
542-4035
(Aderhold Hall)

The Department of Instructional Technology offers the following degrees with a major in instructional technology: MEd, EdS, and PhD. Certification for school library media is also offered in our MEd and EdS degree programs. Students may pursue several certificates within the department.

EDIT 4170/6170. Instructional Design. 3 hours.
Systematic procedures for designing, developing, evaluating, and revising instruction to meet identified goals and objectives.

EDIT 4180/6180. Instructional Development. 3 hours.
Undergraduate prerequisite: EDIT 4170/6170.
Developing instructional materials for a defined context applying a learner-centered, systematic design philosophy. Working within a team environment while applying contemporary learning theories. Engaging in situational assessment, learner analysis, performance specification, test construction, strategies selection, materials design, and evaluation.

EDIT 4500/6500. Educational Television Production. 3 hours.
Design, production, and use of digital and analog video. Laboratory experiences with studio and portable cameras; editing and other equipment suitable for school use.

EDIT 6000. Special Problems in Instructional Technology. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Independent study of selected problems in instructional technology.

EDIT 6100. Introduction to Instructional Technology. 3 hours.
The field of instructional technology, situating the field within the context of its historical perspective, current practices, and future directions.

EDIT 6150. Introduction to Computer-Based Education. 3 hours.
The computer and its educational applications. Computer-based education in the areas of instruction, text and data processing, multimedia, and telecommunications. Philosophical perspectives on the role of computer technology in education.

EDIT 6190. Design and Development Tools. 3 hours.
Repeatable for maximum 6 hours credit.
Not open to students with credit in EDIT 6220.
Prerequisite: Permission of department.
Students learn a variety of tools appropriate for computer-based development. These include graphics, media, and software development tools. Students are required to write a contract for the specific tools to be learned.

EDIT 6200. Learning Environments Design I. 3 hours.
Prerequisite: EDIT 4170/6170 and EDIT 6190.
Instructional design, learning theory, project management, and evaluation of designing interactive learning environments for education and training. Students and faculty work in teams to produce interactive multimedia, electronic performance support systems, internet resources, and other evolving forms of technology-enhanced learning environments.

EDIT 6210. Learning Environments Design II. 3 hours.
Prerequisite: EDIT 6200.
Contemporary learning theories of the design of interactive environments for information retrieval, learning, and performance support. Students and faculty work in teams to produce hypertext, hypermedia, microworlds, simulations, games, virtual learning environments, and other examples of interactive environments.

EDIT 6300. Administration of Media Programs. 3 hours.
Management of resources, services, and functions of the school media program. Students develop a vision and plan for improving collections, technical services, and promotion activities.

EDIT 6320. Information Technology. 3 hours.
Effective utilization, integration, and management of technology tools within the curriculum, with emphasis on planning, needs assessment, and organizational structure.

EDIT 6340. Information Services in School Media Programs. 3 hours.
Students analyze criteria for planning, selecting, using, and evaluating a variety of electronic and print resources for information services in schools.

EDIT 6360. Information Literacy in the School Media Program. 3 hours.
School media specialist's role in collaborative planning partnerships with classroom teachers, integration of information literacy skills within the curriculum, and strategies for teaching information literacy.

EDIT 6400. Emerging Approaches in Teaching, Learning, and Technology. 3 hours.
Teaching, learning, and performing, and the ways technological environments can be designed to support these approaches. Describes the theoretical and research foundations of these approaches, and demonstrates varied uses of technology.

EDIT 6900. Research Methods in Instructional Technology. 3 hours.
Locating and interpreting information from published reports, planning and conducting research and evaluation studies, and using research and evaluation procedures to explore questions related to instructional technology.

EDIT 7000. Master's Research. 1-6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

EDIT 7230. Educational Applications of Computer Graphics. 3 hours.
Prerequisite: EDIT 6150 and EDIT 6220.
Static and animated computer graphics for educational settings including use of multiple visual representations in interactive learning environments. Strong focus on theory and research.

EDIT 7320. Research in School Media Services. 3 hours.
Prerequisite: EDIT 6300 and EDIT 6900.
Identifies contemporary problems in the field of school media services around which students design appropriate research studies.

EDIT 7340. Issues in School Media Programs. 3 hours.
Prerequisite: EDIT 6300 and EDIT 6320 and EDIT 6340 and EDIT 6360.
Explores contemporary trends, problem areas, and issues in management of school media programs through literature investigations, seminar discussions, and case studies.

EDIT 7460. Internship in Instructional Technology. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
On-site experiences under supervision of qualified persons in the field. Students maintain and submit a log, journal, or other documentation of their experience.

EDIT 7500. Technology-Enhanced Classroom Environments. 3 hours.
Design and creation of technology-enhanced classroom environments. Examines role of current and emerging technologies in the classroom.

EDIT 7520. Distance Learning and Telecommunications. 3 hours.
Distance learning and telecommunications in the United States and the world, covering history, research, technology, uses, and policy issues; development of appropriate educational applications.

EDIT 7550. Management of Instructional Technology Projects. 3 hours.
Planning, organizing, supervision, and evaluation of technology-based education and training projects and support services in a variety of settings.

EDIT 7650. Applied Research Project in Instructional Technology. 3 hours.
Prerequisite: Permission of department.
Culminating activity leading to the Specialist Degree. Student applies skills, knowledge, and appropriate research methods to identify and solve real world professional problems.

EDIT 8150. Instructional Message Design. 3 hours.
Prerequisite: EDIT 6210.
Application of message design principles to the creation of instructional messages in the materials for various media. Motivation, memory, perception, attitude changes, and concept learning principles are integrated into practical exercises.

EDIT(EADU) 8200. Theory and Practice of Educational Change. 3 hours.
Individual and collective meanings of change, theory, and practice of organizational change and development in a variety of educational settings.

EDIT 8350. Instructional Product Evaluation. 3 hours.
Prerequisite: EDIT 4170/6170 and (ERSH 6300 or STAT 6210).
Planning, conducting, analyzing, and reporting systematic evaluations of instructional products such as computer-based training, interactive multimedia, and distance learning.

EDIT 8990. Doctoral Seminar. 1 hour. Repeatable for maximum 4 hours credit.
Developmental forum for establishing, clarifying, and evolving student's perspectives on instructional technology research. Heighten awareness of critical issues in the field and areas of disciplined inquiry.

EDIT 9000. Doctoral Research. 1-6 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EDIT 9300. Doctoral Dissertation. 1-6 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EDIT 9600. Educational Research in Instructional Technology. 1-6 hours. Repeatable for maximum 12 hours credit.
Individual research under the supervision of a faculty member.

EDIT 9630. Critique of Literature in Instructional Technology. 3 hours.
Research and theoretical literature in instructional technology. Review and evaluation of current research in selected areas is emphasized. A synthesis of the literature in an area of interest is completed by each student.

EDIT 9990. Doctoral Topical Seminar. 3 hours. Repeatable for maximum 12 hours credit.
Examination of topical issues in instructional technology.

Language Education

Joel A. Taxel, *Head*
Linda C. DeGroff, *Graduate Coordinator,*
542-4510
(Aderhold Hall)

The department offers the MA, MEd, EdS, and PhD degrees with specializations in childrenís literature and language arts, English Education, and teaching additional languages (ESL and foreign language education).

ELAN 4000/6000. Independent Study in Language Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Selected topics related to teaching language arts or a foreign language.

ELAN 4410/6410. Adolescent Literature, Grades 7-12. 3 hours.
Undergraduate prerequisite: Permission of department.
Undergraduate corequisite: ELAN 4400/6400 or ELAN 4401/6401 or ELAN 4460/6460 or ELAN 4470/6470.
Adolescent literature and its selection and use in the middle school and high school to promote engagement with literature and as a bridge to the classics.

ELAN 4462/6462. Student Teaching Seminar in English Education, Grades 7-12. 3 hours.
Undergraduate prerequisite: ELAN 4400/6400 or ELAN 4401/6401 or ELAN 4410/6410 or ELAN 4460/6460 or ELAN 4470/6470.
Undergraduate corequisite: ELAN 5460.
Issues of classroom teaching. Students plan for and examine their concurrent student teaching experience in light of research and theory, peers' experiences in other school settings, and their own teaching and learning histories.

ELAN 4630/6630. TESOL Methods and Materials for Adult Learners. 3 hours.
Principles, methods, materials, and activities for the teaching of English to adult speakers of other languages.

ELAN 5040/7040. Language and Culture in the Classroom. 3 hours.
Exploration of topics on the relationship between language and culture and on pedagogical principles of multicultural education.

(ELAN)(EDEC)(EDEL)EDMS 5180/7180. Understanding Cultural and Linguistic Diversity in Schools. 2 hours.
Not open to students with credit in ELAN 5040.
Undergraduate prerequisite: Permission of department.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L.
Influences of cultural pluralism on American education. Characteristics of culturally and linguistically diverse groups and the relationship among language, culture, and learning. Development of culturally responsive teaching strategies.

(ELAN)(EDEC)(EDEL)EDMS 5180L/7180L. Understanding Cultural and Linguistic Diversity in Schools Laboratory. 2 hours. 4 hours lab per week.
Not open to students with credit in ELAN 5040.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180/7180.
On-site in Mexico or other Spanish-speaking countries in Latin America, immersion in the country's social, cultural, and educational environments. Visits to schools and social agencies; discussion with preservice and inservice educators, and development of conversational Spanish abilities.

ELAN 5312/7312. Poetry, Grades P-8. 3 hours.
Poems and enrichment activities for use in elementary and middle school classes; ways of encouraging children to respond to published poetry, to understand poetic devices, and to write poetry.

ELAN 5314/7314. Informational Literature, Grades P-8. 3 hours.
Reading of informational literature and examining selection criteria and ways to integrate informational books into language arts and content area curricula appropriate for preschool through 8th grade.

ELAN 5318/7318. Culturally Diverse Children's Literature, Grades P-8. 3 hours.
Undergraduate prerequisite: ELAN 5210.
Graduate prerequisite: ELAN 6310 or ELAN 7310.
Children's fiction, poetry, and nonfiction literature dealing with the experiences of diverse cultures comprising American society. Development of criteria for evaluation and strategies for incorporating literature into the curriculum.

ELAN 5332/7332. Drama, Grades P-8. 3 hours.
Integrating drama across the curriculum, including improvisational process drama, connecting to issues associated with children's literature, reading, writing, storytelling, and thematic oriented units of study with students in grades prekindergarten through middle school.

ELAN 5390/7390. Difficulties in Literacy Teaching and Learning, Grades P-8. 3 hours.
Issues related to preschool through 8th grade readers and writers with diverse learning paths, including learning disabilities, English as a second language, and histories of school failure. Effective teaching strategies include culturally-responsive teaching, student-generated curriculum and assessment links, interdisciplinary connections, and family involvement.

ELAN 5630/7630. ESOL, Grades P-12. 3 hours.
Foundations of second language learning, curricular and materials design, and methods of teaching nonnative speakers of English in primary through secondary school settings.

ELAN 5730/7730. First and Second Language Acquisition and Development. 3 hours.
Native and second language acquisition processes, with attention to regional, social, and functional variation in language and contrasts between English and other selected languages.

ELAN 6100. Language Arts, Grades P-5. 3 hours.
Research and theory on oral and written language acquisition, development, and variation and the implications for classroom practices. Whole language instructional techniques for the development of written and oral language.

ELAN 6310. Survey of Children's Literature, Grades P-8. 3 hours.
Prerequisite: Permission of department.
Literature appropriate for children, preschool through middle school.

ELAN 6631. Bilingualism and Bilingual Education. 3 hours.
Current theories and research on bilingualism and bilingual education.

ELAN 7000. Master's Research. 1-6 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ELAN 7016. Folk Literature, Grades P-12. 3 hours.
Genres of folk literature, their relationship to formal literature, and their role in contemporary society. A study of culture through folklore.

ELAN 7070. Research Methods in Language Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Research methods appropriate for studying language teaching and learning.

ELAN 7300. Master's Thesis. 1-6 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ELAN 7310. Children's Literature in the Curriculum, Grades P-8. 3 hours.
Prerequisite: Permission of department.
Role of children's literature in the curriculum, including principles and techniques in selection of books and implementation of literature-based curriculum.

ELAN 7320. Writing Pedagogy, Grades P-8. 3 hours.
Strategies for building literate classroom communities based on current theory and research.

ELAN 7330. Storytelling and the Oral Tradition, Grades P-8. 3 hours.
Prerequisite: ELAN 3110 or ELAN 5210 or ELAN 6310.
The role of storyteller in preliterate and literate cultures, and practice in the arts of poetic recitation, choral reading, and storytelling as they relate to the primary and middle school grades.

ELAN 7400. Current Issues in English Education, Grades 7-12. 3 hours.
Based on their own experiences in schools, students will identify issues of language and literacy that present challenges and potential in an increasingly diverse culture.

ELAN 7408. Capstone Seminar in English Education, Grades 7-12. 3 hours.
Prerequisite: ELAN 7400.
Critical issues in the teaching of English based on student input as teachers.

ELAN 7410. Guided Reading of Young Adults, Grades 7-12. 3 hours.
The needs and concerns of young adults as readers of imaginative literature and theoretical foundations of a successful program for literature instruction.

ELAN 7420. Writing and Literacies in English Education, Grades 7-12. 3 hours.
Prerequisite: ELAN 7400.
Theoretical implications of traditional, critical, and deconstructive pedagogies of writing and their usefulness in the classroom.

ELAN 7430. Language and Learning in English Education, Grades 7-12. 3 hours.
Prerequisite: ELAN 7400.
Linguistic diversity, the varieties of English, English as a second language, and exploring the power of language as a cultural and political tool.

ELAN 7500. Curriculum Planning in Foreign Language Education, Grades P-12. 3 hours.
Prerequisite: Permission of department.
Historical, philosophical, and sociological bases for curriculum planning in foreign languages; survey of current trends in design and content.

ELAN 7600. Reading and Writing in a Non-Native Language. 3 hours.
Linguistic, cognitive, and social dimensions of reading and writing in a non-native language.

ELAN 7650. Applied Project in Language Education. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Intensive study of a selected topic through library research and/or collection of original data.

ELAN 7700. Creating Literate Communities, Grades 7-12. 3 hours.
Prerequisite: ELAN 7400.
How literate communities develop, how group members talk about texts, and how they negotiate roles within groups of readers.

ELAN 7731. Advanced Topics in First and Second Language Acquisition. 3 hours.
Research and theories on first and second language acquisition and development.

ELAN 7732. Classroom Discourse. 3 hours.
Current theories and research on the pedagogical role of discourse in classrooms.

ELAN 7768. International Graduate Internship I. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Score of 44 or below on the SPEAK test or Test of Spoken English.
Provides international graduate teaching assistants with knowledge of pedagogical approaches and available support systems. The course focuses on cultural aspects of teaching and English language for the classroom with particular attention to pronunciation, stress, and intonation patterns.

ELAN 7769. International Graduate Internship II. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Score of 45 or above on the SPEAK test or Test of Spoken English.
Provides international graduate teaching assistants with knowledge of pedagogical approaches and available support systems. The course focuses on English language for the classroom and cultural aspects of teaching with emphasis on presentation skills and audience awareness.

ELAN 8000. Doctoral Seminar in Language Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Critiques of published research and reports of original research conducted by faculty members and doctoral students.

ELAN 8005. Independent Study in Language Education. 1-9 hours. Repeatable for maximum 18 hours credit.
Not open to students with credit in ELAN 9020.
Prerequisite: Permission of department.
Directed readings in research related to language teaching and learning.

ELAN 8010. Theory and Research in Response to Literature, Grades P-12. 3 hours.
Prerequisite: ELAN 7310 or ELAN 7410.
Theories of Rosenblatt, Iser, Bakhtin, and others. Research in how readers create meaning from literature in elementary, secondary, and college classrooms.

ELAN 8020. Research Seminar on Composing Processes. 3 hours.
Research on the composing processes, including developmental rhetoric, speaking and writing relationships, thought processes involved in composing, qualitative research methodology, and implications of research for curriculum and instruction in writing.

ELAN 8030. Discourse Analysis and Language Learning. 3 hours.
Recent research and theories on the pedagogical role of discourse in first and second language classrooms.

ELAN 8032. Seminar on Thought and Language. 3 hours.
Theories of the relation between thought and language, with emphasis on the works of Vygotsky and educational theorists and researchers working from a Vygotskian frame. Explores pedagogical implications for literacy, literature, and language learning.

ELAN 8040. Languages, Cultures, and Literacies. 3 hours.
Theory and research on literacy and its relationship to culture, social process, and identity.

ELAN 8310. Race, Class, and Gender in Literature for Young People. 3 hours.
Prerequisite: ELAN 6310 or ELAN 7310 or permission of department.
Historical evolution of representations of women and racial minorities in children's literature. Theory and research exploring the relation between children's literature and changing sociocultural and political values and ideologies provide the framework for the course. The relation between sociocultural and political values and more traditional aesthetic considerations.

ELAN 8400. Assessment and Evaluation in Language Education. 3 hours.
Philosophical stances underlying various purposes and practices for assessing and evaluating student and teacher performance and progress in secondary language arts programs. Examines issues from a historical perspective.

ELAN 8410. Seminar in Literature Curriculum, Grades 7-12. 3 hours.
Recent trends in literature curriculum development in secondary schools; critical examination of issues related to literature curriculum development with special attention to theories of reading and of young adult literature.

ELAN(ERSH) 8550. Writing Up Qualitative Research. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ERSH 8410 or permission of department.
Theoretical, ethical, and practical issues involved in transforming qualitative data into a written research report. Students, both in dissertation and pre-dissertation, will write representations of data they have already collected.

ELAN 8600. Research on Second Language Acquisition. 3 hours.
Research and theories on the acquisition of other languages in classroom settings.

ELAN 8730. Advanced English Language Studies for Teachers. 3 hours.
Scholarship in the teaching of English language; theory and research-based critiques of English language teaching methods and policies; classroom discourse studies; and language variation in educational settings.

ELAN 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ELAN 9040. Review of Research in Language Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Review of research on the theory and research of language and literacy.

ELAN 9060. Special Topics in Language Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Selected topics related to the theory and research of language and literacy.

ELAN 9080. Critique of Theory and Research in Language Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Survey of research related to language teaching and learning.

ELAN 9100. Doctoral Examinations and Prospectus Preparation. 1-12 hours. Repeatable for maximum 36 hours credit.
Written and oral comprehensive examinations and development of dissertation prospectus.

ELAN 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 48 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Mathematics Education

Patricia S. Wilson, *Head*
James W. Wilson, *Graduate Coordinator,*
542-4552
(Aderhold Hall)

EMAT 4000/6000. Special Problems in Mathematics Education. 1-6 hours. Repeatable for maximum 9 hours credit.
Topics in mathematics education.

EMAT 4200/6200. Technology in Teaching Elementary School Mathematics. 3 hours.
Undergraduate prerequisite: Permission of department.
Use of technological tools in teaching elementary mathematics. Current computer software for mathematical explorations.

EMAT 4360/6360. Teaching and Learning Secondary School Mathematics. 3 hours.
Undergraduate prerequisite: EMAT 4680/6680 and permission of department.
Undergraduate corequisite: EMAT 5360/7360.
Instructional strategies, classroom management, assessment techniques, lesson planning, multicultural and gender issues in mathematics education.

EMAT 4500/6500. Connections in Secondary School Mathematics. 3 hours.
Undergraduate prerequisite: [EMAT 3500 or (MATH 2210 and MATH 2210L)] or permission of department.
The secondary mathematics curriculum, with attention to applications of mathematics and to connections within mathematics and between mathematics and other subjects.

EMAT 4550/6550. Contemporary School Mathematics. 3 hours.
Undergraduate prerequisite: [EMAT 3500 or (MATH 2210 and MATH 2210L)] or permission of department.
The contemporary secondary and collegiate mathematics curriculum, with an emphasis on data handling, modeling, infinite processes, stochastic processes, and discrete mathematics.

EMAT 4600/6600. Problem Solving in Mathematics. 3 hours.
Undergraduate prerequisite: [EMAT 3500 or (MATH 2210 and MATH 2210L)] or permission of department.
Mathematical problems with emphasis on exploring various mathematical contexts, on posing and extending problems, and on communicating mathematical problems and solutions.

EMAT 4650/6650. Historical and Cultural Foundations of Mathematics. 3 hours.
Undergraduate prerequisite: [EMAT 3500 or (MATH 2210 and MATH 2210L)] or permission of department.
Development of mathematics across time, geography, and cultures with attention to the content of school mathematics.

EMAT 4680/6680. Technology and Secondary School Mathematics. 3 hours.
Undergraduate prerequisite: MATH 2210 and MATH 2210L.
Mathematical investigations appropriate to the secondary school using various technology tools.

EMAT 4690/6690. Technology Enhanced Instruction in Secondary School Mathematics. 3 hours.
Undergraduate prerequisite: MATH 2210 and MATH 2210L.
Use of technology in mathematics instruction and development of materials for mathematics instruction enhanced by technology.

EMAT 4700/6700. Advanced Explorations with Technology in Mathematics Instruction. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: MATH 2210 and MATH 2210L.
Use of technology in mathematics instruction, with an emphasis on the organization of materials for secondary mathematics courses.

EMAT 4950/6950. Professional Seminar in Teaching Mathematics. 3 hours.
Undergraduate prerequisite: EMAT 4360/6360.
Undergraduate corequisite: EMAT 5460/7460.
Issues identified from the student teaching experience in mathematics with consideration of various avenues for professional development.

EMAT 5280/7280. Teaching Number Systems in the Middle School. 3 hours.
Undergraduate prerequisite: MATH 2200 and MATH 2200L and permission of department.
Undergraduate corequisite: MATH 5020/7020.
Didactics of number systems for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing natural, integer, rational, and real number structures. Evaluation through the examination of mathematics content, with emphasis on the mathematical operations, models, and problem solving.

EMAT 5290/7290. Teaching Geometry and Measurement in the Middle School. 3 hours.
Undergraduate prerequisite: EMAT 5280/7280.
Undergraduate corequisite: MATH 5030/7030.
Didactics of geometry for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing geometric and measurement concepts. Evaluation through the examination of mathematics content, with emphasis on statistics, probability, and mathematical applications.

EMAT 5310/7310. Teaching Mathematics in the Middle School. 3 hours.
Undergraduate prerequisite: EMAT 5290/7290.
Methods and materials for teaching mathematics in the middle school, with emphasis on integration of mathematical topics.

EMAT 5320/7320. Teaching Algebra in the Middle School. 3 hours.
Undergraduate prerequisite: EMAT 5290/7290.
Didactics of algebra and number theory for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing algebraic concepts.

EMAT 5360/7360. Secondary School Mathematics Field Experience. 3 hours.
Undergraduate prerequisite: EMAT 4680/6680 and permission of department.
Undergraduate corequisite: EMAT 4360/6360.
Supervised observations, interviews, tutoring, teaching practice, and professional goal development.

EMAT 5460/7460. Student Teaching in Secondary School Mathematics. 1-15 hours. Repeatable for maximum 15 hours credit.
Undergraduate prerequisite: EMAT 4360/6360.
Undergraduate corequisite: EMAT 4950/6950.
Supervised mathematics teaching in a secondary school.

EMAT 6410. Mathematical Learning in PreK-Grade 5. 3 hours.
Learning theories and their application to mathematics teaching and learning.

EMAT 6420. Mathematics Methods for Early Childhood Education. 3 hours.
Content, methods, and materials appropriate for preK through 5th grade mathematics instruction. Integration of instruction and assessment and appropriate use of technology.

EMAT 6990. Research Seminar in Mathematics Education. 1-6 hours. Repeatable for maximum 9 hours credit.
Topics in mathematics education from a research perspective.

EMAT 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

EMAT 7010. Teaching Mathematics in the Elementary School. 3 hours. Repeatable for maximum 6 hours credit.
Interrelationships between contemporary mathematics content for elementary schools, effective mathematical communication with children, and learning theory.

EMAT 7050. Teaching Secondary School Mathematics. 3 hours.
Prerequisite: Permission of department.
Instructional procedures and evaluation in terms of student growth.

EMAT 7070. Mathematics Curriculum in the Elementary School. 3 hours. Repeatable for maximum 6 hours credit.
Elementary school mathematics curriculum with special emphasis on contemporary programs, issues, and trends.

EMAT 7080. Curriculum in Mathematics Education. 3 hours.
Prerequisite: Permission of department.
Mathematics curriculum of the secondary schools, with emphasis on current issues and trends.

EMAT 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

EMAT 7650. Applied Project in Mathematics Education. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A mathematics education topic or problem under the direction of a faculty member.

EMAT 7700. Internship in Mathematics Education. 1-15 hours. Repeatable for maximum 15 hours credit.
Not open to students with credit in EMAT 5460/7460.
Prerequisite: Permission of department.
Supervised work in mathematics education in an instructional context.

EMAT 8010. Advanced Study of Mathematics Curriculum. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (EMAT 7050 and EMAT 7080) or permission of department.
Theoretical bases for mathematics curriculum.

EMAT 8020. Advanced Study of Mathematics Teaching and Teacher Education. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (EMAT 7050 and EMAT 7080) or permission of department.
Theoretical bases for mathematics teaching and teacher education.

EMAT 8030. Advanced Study of Mathematics Learning. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (EMAT 7050 and EMAT 7080) or permission of department.
Theoretical bases for mathematics learning.

EMAT 8990. Research Seminar in Mathematics Education. 1-6 hours. Repeatable for maximum 12 hours credit. 1 hour lab per week.
Prerequisite: Permission of department.
Seminar for doctoral students on contemporary issues in mathematics education.

EMAT 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EMAT 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EMAT 9600. Educational Research in Mathematics Education. 1-9 hours. Repeatable for maximum 9 hours credit. 1 hour lab per week.
Prerequisite: Permission of department.
Independent research on a problem in mathematics education.

EMAT 9630. Critique of Literature in Mathematics Education. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Critical interpretation and evaluation of research and theoretical writing in mathematics education.

EMAT 9640. Analysis and Critique of Research in Mathematics Education. 3 hours. Repeatable for maximum 9 hours credit. 3 hours lab per week.
Prerequisite: Permission of department.
Analysis and evaluation of research in mathematics education.

EMAT 9700. Internship in Mathematics Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Supervised work in mathematics education in an instructional situation.

EMAT 9800. Practicum in Mathematics Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Completion of a supervised project in mathematics education.

Music Education

Donald R. Lowe, *Director and Graduate Coordinator,* 542-2743
(Music Building)

EMUS 6000. Special Problems in Music Education. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Individual research projects involving library investigation or the collection and analysis of original data pertinent to a given problem.

EMUS 7460. Internship in Music Education. 1-13 hours. Repeatable for maximum 13 hours credit.
Prerequisite: Permission of department.
Professional seminar and supervised teaching in the public schools.

EMUS 7650. Applied Project in Music Education. 3 hours.
Prerequisite: Permission of department.
Topic or problem in music education significantly related to the student's professional needs.

EMUS 8220. Philosophy, History, and Practice of Music Education. 3 hours.
National and international philosophical thought and practice in music education; history of music.

EMUS 8990. Research Seminar in Music Education. 1-3 hours. Repeatable for maximum 6 hours credit.
Music education research topics and reports.

EMUS 9000. Doctoral Research. 1-10 hours. Repeatable for maximum 40 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EMUS 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 33 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EMUS 9630. Critique of Literature in Music Education. 3 hours.
Fundamental sources, databases, and techniques used in conducting library research; analysis of broad spectrum of the professional literature in music education, with emphasis on critical reviews of standard references and current literature.

Occupational Studies

Clifton L. Smith, *Head*
Robert C. Wicklein, *Graduate Coordinator,* 542-4503
(River's Crossing)

The goal of the Department of Occupational Studies is to prepare educators to assist individuals to meet the challenges of living and working in a global society. The department offers comprehensive, broad-based curricula that focus on workforce preparedness, integration of research on workplace issues, integrating technology and basic skills applications into courses, and increased efforts to prepare educators to work with different popoulations.

The curricula is futuristic and innovative. It is both broad-based and allows for individualized, specialized studies. It emphasizes effective teaching, technology, leadership, theory, and research. Teacher certification is now available through the masterís programs. Faculty are committed to program development and are working to create a world-class graduate program in occupational studies.

Agricultural Education

EAGR 4010/6010. Agricultural Education Leadership Seminar. 1 hour. Repeatable for maximum 5 hours credit. 1 hour lab per week.
Current problems in teaching agricultural education and training in specialized areas relevant to the needs of future teachers of agricultural education.

EAGR 4340/6340. Developing Community Programs in Agriculture. 3 hours.
Developing the components of high school agriculture education programs, including collection and use of demographic data to design and implement community based programs.

EAGR 4350/6350. Curriculum Planning in Agricultural Education. 3 hours.
Content identification, program organization, preparation of instructional objectives, and guidelines for selection and development of instructional materials for agricultural education.

EAGR 4360/6360. Instructional Strategies in Agricultural Education. 3 hours.
Study and evaluation of teaching materials, methods, techniques, and strategies utilized in agricultural education.

EAGR 7020. Methods of Instruction in Agricultural Education. 3 hours.
Instructional procedures, materials, and evaluation techniques in agricultural education.

EAGR 7450. Internship in Agricultural Business/ Industry. 1-3 hours. Repeatable for maximum 6 hours credit.
Internship in an agricultural business for experienced educators.

EAGR 7460. Internship in Agricultural Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Selected problems confronting a beginning teacher, with emphasis upon program planning, class preparation, instructional strategies, and evaluation techniques.

EAGR 7650. Applied Project in Agricultural Education. 3 hours.
Prerequisite: ERSH 4200/6200.
Topic or problem in agricultural education significantly related to the student's professional responsibility.

Business Education

EBUS 4010/6010. Business Communication. 3 hours.
Theory and practice of thinking, reading, writing, speaking, and listening processes involved in business education.

EBUS 4020/6020. Computer Concepts and Operating Systems for Occupational Studies. 3 hours.
Computer hardware and software operating procedures, data organization and representation. Current trends in occupational uses of computer technology and instructional approaches for teaching operating systems.

EBUS 5030/7030. Word Processing Applications. 3 hours.
Undergraduate prerequisite: Permission of department. Word processing with popular software packages. Focus is on advanced features of word processing packages, including merging, sorting, mathematical functions, and desktop publishing and instructional approaches for teaching word processing in occupational studies.

EBUS 5060/7060. Desktop Publishing in Occupational Studies. 3 hours.
Computer applications for electronic publishing, including elements of page design, effective publications, presentations, instructional materials, and instructional approaches for teaching desktop publishing in occupational studies.

EBUS 5070/7070. Office Management. 3 hours.
Office management, including practices, supervision, information management, methods and procedures, job organization, evaluation, selection, and training of office personnel.

EBUS 5090/7090. Spreadsheet and Presentation Applications in Occupational Studies. 3 hours.
Undergraduate prerequisite: Permission of department. Spreadsheet and presentation software, including spreadsheet commands, graphs, data sorting, querying, and macro design and presentation software commands, design, sequencing and practice demonstration. Instructional approaches for teaching spreadsheets and presentation software in occupational studies.

EBUS 5100/7100. Systems Analysis and Design for Occupational Studies. 3 hours.
Undergraduate prerequisite: Permission of department. Technical background and knowledge for teaching information systems development and implementation in occupational studies. Instructional strategies for project management, documentation standards, hardware and software considerations, systems design, and program languages.

EBUS 5760/7760. Consumer Financial Planning. 3 hours.
Consumer problems encountered during and after school years. How the economy functions, wise purchase decisions, managing money, evaluating sales and advertising practices, and guarding against unwise buying practices. Instructional approaches for teaching financial planning in occupational studies.

EBUS 7010. Instructional Strategies for Information Processing. 3 hours.
Teaching theory and principles of skill building, materials development, and evaluation relating to teaching of keyboarding, word processing, and machine or manual transcription.

EBUS 7020. Instructional Strategies for Basic Business Education. 3 hours.
Organization, standards, evaluation, textbooks, materials, special teaching techniques, motivation, individual differences in the teaching of basic business courses.

EBUS 7460. Internship in Teaching Business Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Teaching internship in a business education program under the supervision of a classroom business education teacher and a member of the occupational studies faculty.

EBUS 7650. Applied Project in Business Education. 3 hours.
Project written in acceptable thesis format involving library investigation and original data collection pertinent to a chosen problem related to the student's professional task.

Family and Consumer Science Education

EFCS 7460. Internship in Family and Consumer Sciences Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Teaching internship in a family and consumer sciences education program under the supervision of a classroom family and consumer sciences teacher and a member of occupational studies faculty.

EFCS 7600. Nutrition Education. 3 hours.
Current trends in nutrition education; emphasis on the development of a nutrition education program for a local community setting.

EFCS 7650. Applied Project in Family and Consumer Sciences Education. 3 hours.
Project written in acceptable thesis format involving library investigation and original data collection pertinent to a chosen problem related to the student's professional task.

Marketing Education

EMKT 4100/6100. Economic Foundations for Work-Based Education. 3 hours.
Economic principles and concepts of free-market economies in work-based education programs, with emphasis on instructional approaches.

EMKT 4110/6110. Marketing and Business Foundations of Work-Based Education. 3 hours.
Business and marketing concepts, business environments, and managerial systems in work-based education, with emphasis on instructional strategies.

EMKT 4120/6120. Human Resource Foundations in Work-Based Education. 3 hours.
Human relations, communications, mathematics, management, and career development in work-based education programs, with emphasis on instructional strategies.

EMKT 7460. Internship in Teaching of Marketing Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Teaching internship in a marketing education program under the supervision of a classroom marketing teacher and a faculty member in occupational studies.

EMKT 7650. Applied Project in Marketing Education. 3 hours.
Topic or problem in marketing education significantly related to the student's professional responsibility.

Occupational Studies

EOCS 4000/6000. Directed Readings in Occupational Studies. 1-3 hours. Repeatable for maximum 6 hours credit.
Individual research in an occupational studies discipline under the direction of a faculty member.

EOCS 4100/6100. Principles and Practices of Career Education. 3 hours.
Career education in elementary, middle, and secondary schools; major theories of career development; use of standardized assessment, career information resources, and curriculum materials; special issues and trends influencing work and careers.

EOCS 4350/6350. Curriculum Planning in Occupational Studies. 3 hours.
Content identification, program organization, preparation of instructional objectives, and guidelines for selection and development of instructional materials for occupational studies programs.

EOCS 4360/6360. Instructional Strategies in Occupational Studies. 3 hours.
Teaching materials, methods, techniques, and strategies utilized in programs of occupational studies.

EOCS 4990/6990. Topics in Occupational Studies. 1-3 hours. Repeatable for maximum 6 hours credit.
Contemporary issues in occupational studies with emphasis on the effect of these issues on education and the workplace.

EOCS 5030/7030. Organizing and Coordinating Work and Community-Based Education Programs. 3 hours.
Planning, implementing, and directing various school-to-career transition models in education.

EOCS 5050/7050. Problems of Teaching Occupational Studies. 3 hours.
Undergraduate prerequisite: Permission of department.
Selection, utilization, and evaluation of strategies that support effective teaching in occupational studies.

EOCS 5060/7060. Student Organizations in Occupational Studies. 2 hours.
Student organizations in occupational studies programs, emphasizing contributions of organizations to the curricula. Planning, directing, and evaluating activities such as group and individual projects. Techniques of leadership and group development are included.

EOCS 5120/7120. Needs Analysis in Occupational Studies. 3 hours.
Techniques in analyzing occupations, industry, human resources, and communities to determine instructional and training content.

EOCS 5450/7450. Internship in Business and Industry. 1-3 hours. Repeatable for maximum 6 hours credit.
Guided learning experiences in a business or industry for the purpose of updating a student's knowledge or skills in an occupational area.

EOCS 5550/7550. Students With Special Needs in Programs of Occupational Studies. 3 hours.
Learning characteristics of students with special needs, including those who are disabled, economically and academically disadvantaged. Implications for occupational studies are considered and modifications of curriculum and instruction are identified.

EOCS 6010. Foundations of Work and Family Life Education. 3 hours.
Philosophic and historical foundations for occupational and family life education.

EOCS 6030. Supervision of Occupational Teaching. 3 hours.
Theoretical and research base for the supervision of student teachers in occupational studies; policies, procedures, and problems related to the supervised teaching program.

EOCS 7020. Assessing Student Learning in Occupational Studies. 3 hours.
Nature and function of assessing student learning in programs of occupational studies.

EOCS 7070. Enhancing Learning in Occupational Studies. 3 hours.
Learning theory and research in programs of occupational studies.

EOCS 7080. Developing Curricula and Programs for Modern Work. 3 hours.
Curriculum theories and models for planning, developing, and evaluating programs of occupational instruction. Social, psychological, philosophical, and practical factors which influence curricular development and implementation are included. Focus is on learning theories and assumptions as applied to curriculum in occupational studies.

EOCS 7200. Evaluation of Programs in Occupational Studies. 3 hours.
Concepts, principles, and procedures basic to the evaluation of programs in occupational studies.

EOCS 7460. Internship in Teaching Occupational Studies. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Teaching internship in an occupational studies program under the supervision of a classroom teacher and a faculty member in occupational studies.

EOCS 7560. Diversity in Occupational Education and Work. 3 hours.
Prerequisite: EOCS 5550/7550.
Current issues relevant to students from economically disadvantaged and/or culturally diverse backgrounds. Characteristics of individuals deemed at-risk of school failure, relationship of poverty and cultural diversity, applicable legislation, and educational and societal responsibilities.

EOCS 7650. Applied Project in Occupational Studies. 3 hours.
Topic or problem in occupational studies significantly related to the student's professional responsibility.

EOCS 8000. Technology for Education in the Workplace. 3 hours.
Technology for educational and workplace environments. Teaching/learning paradigms that influence the application of educational technologies within the context of education and the workplace.

EOCS 8020. International Occupational Education. 3 hours.
Occupational education systems and international applications. Analysis of factors affecting international work and the planning of international occupational programs are emphasized.

EOCS 8030. Organizational Behavior in Programs of Occupational Studies. 3 hours.
Theories and models of behavior in organizations and institutions offering programs in occupational studies. Theories affecting adaptation and change; determinants of individual, interpersonal, and group behavior; and institutional structures and processes are examined.

EOCS 8060. Administration and Supervision of Occupational Studies Programs. 3 hours.
Administration and supervision of organizations engaged in occupational education. Management theories of empowerment, team learning, collaboration, and implementation of systems for continuous organizational learning.

(EOCS)EADU 8190. Human Resource Development. 3 hours.
Explores three areas of practice and theory of HRD: training, career development, and organization development. HRD practice at the individual, group, and organizational levels.

EOCS 8990. Research Seminar in Occupational Studies. 1-3 hours. Repeatable for maximum 6 hours credit.
Development of research skills necessary to identify an appropriate dissertation topic and prepare the prospectus.

EOCS 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 27 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EOCS 9010. Workforce Issues and Policy Development. 3 hours.
Sociological, economic, political, and demographic trends that impact on occupational education at the local, state, national, and international levels.

EOCS 9020. Leadership Development in Occupational Studies. 3 hours.
Leadership philosophies, theories, and research as related to organizations engaged in occupational studies and training. Research and theory are translated into practice for educational leaders in occupational studies.

EOCS 9030. Philosophy of Education and Work. 3 hours.
Review of historical and contemporary educational philosophies in light of their impact on the structure and practice of education and work. Discussion of personal, professional philosophy statements that address the interaction of philosophy and practice in education and work, including six philosophical camps, classical philosophers, contemporary issues such as economy and labor, and globalization issues. Identification of educational philosophies that underlie various views about education and work.

EOCS 9100. Educational Research In Occupational Studies. 3 hours.
Not open to students with credit in EOCS 9600.
Critical evaluation of research literature, research paradigms, future research needs, and research design/methodology in occupational studies.

EOCS 9200. Research Design and Methodology in Occupational Studies. 3 hours.
Prerequisite: EOCS 9100.
Design, implementation, and evaluation of scholarly inquiry in occupational studies. Focus on theory and literature to justify problems; appropriate research designs; selection of appropriate data analysis; and determination of quality of research. Students will discuss, apply, and evaluate key elements and strategies involved in development and dissemination of research proposals.

EOCS 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 27 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

EOCS 9630. Critique of Educational Literature in Occupational Studies. 3 hours.
Research studies, dissertations, and journal articles in occupational studies are analyzed in preparation for the development of the dissertation proposal.

EOCS 9800. Practicum in Occupational Studies. 1-9 hours. Repeatable for maximum 9 hours credit.
Guided learning opportunities allowing students to test principles in the field and to relate theory to practice in an occupational or educational setting.

Technological Studies

ETES 4350/6350. Developing Programs in Technological Studies. 3 hours.
Content identification, program organization, preparation of instructional objectives, and guidelines for selection and development of instructional materials for technological studies.

ETES 5010/7010. Technology and Society. 3 hours.
Impact of technology on society and culture. Included is the investigation of positive and negative aspects of various technologies, with specific attention to the technology education curriculum.

ETES 5020/7020. Communication Systems. 3 hours.
Communication technology in business and industry. Use of microcomputer applications for computer graphics, desktop publishing, electronic presentation, and telecommunications, including layout and design principles and procedures, graphic production systems, photographic processes, societal impacts, and innovative technologies.

ETES 5025/7025-5025L/7025L. Technical Design Graphics. 3 hours. 2 hours lecture and 2 hours lab per week.
Not open to students with credit in ENGR 1120.
Conventional practices for graphic representation of three-dimensional shape and size. Applications of computer-assisted drawing and design software, multiview and pictorial projection, dimensioning, sections, auxiliary views, revolutions, descriptive geometry, and graphical vector analysis. Emphasis on instructional approaches for teaching graphic communication in occupational studies.

ETES 5030/7030. Manufacturing Systems. 3 hours.
Manufacturing through the design, planning, and development of a specific product.

ETES 5040/7040-5040L/7040L. Construction Systems. 3 hours. 2 hours lecture and 2 hours lab per week.
Construction practices used to produce structures in residential and commercial settings. Special emphasis placed on safety in laboratory-based education.

ETES 5060/7060. Energy Systems. 3 hours.
Present and future applications of the technical, economic, and environmental aspects of energy systems and evaluation of their advantages and disadvantages.

ETES 5070/7070. Research and Experimentation in Technological Studies. 3 hours.
Solving technological problems through the analysis and implementation of technical research and experimentation methods. Suitable research and experimentation activities will be developed and analyzed for technology education programs in secondary schools.

ETES 5140/7140. Laboratory Planning, Management, and Safety. 3 hours.
Planning and managing laboratories, including the development of a safety program and selection of equipment, tools, and supplies.

ETES 7080. Critical Issues in Technological Studies. 3 hours.
Current problems and issues, contemporary trends, strategies for initiating change, and resources needed to implement changes in technological studies.

ETES 7090. Principles of Technology. 3 hours.
Technological literacy acquired through applied physics concepts and laws. Special emphasis on teaching the integration of mathematics, science, and technology scholarship.

ETES 7100. Appropriate Technological Development. 3 hours.
Research and development of self-help technologies used to create and maintain appropriate levels of technological growth. Focuses on field projects, programs, and consultancies testing and demonstrating applications of relevant and efficient technological solutions to problems.

ETES 7460. Internship in Technological Studies. 1-12 hours. Repeatable for maximum 12 hours credit.
Work-based program of student activities, such as administration, supervision, teaching, curriculum, or staff development in an existing technological studies program.

ETES 7650. Applied Project in Technological Studies. 3 hours.
Research and development of a topic or problem in technological studies as related to the student's career.

Reading Education

David Reinking, *Head*
Michelle Commeyras, *Graduate Coordinator,*
542-4621
(Aderhold Hall)

The Department of Reading Education offers the following degrees: MA, MEd, EdS, EdD and PhD. See website for more details: http://www.coe.uga.edu/reading/.

READ 6000. Special Problems in Literacy. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Approved independent research project pertaining to literacy.

READ 6010. Foundations of Reading Instruction. 3 hours.
Principles and practices in preschool through secondary reading instruction.

READ 6020. Children With Reading Problems. 3 hours.
Formal and informal assessments, instructional procedures and materials for improving decoding, word recognition, comprehension, and study skills.

READ 6030. Teaching Reading in the Secondary School. 3 hours.
Concepts and strategies for developing reading and study skills needed by students in secondary schools.

(READ)EADU 6040. Teaching Reading to Low-Literate Adults. 3 hours.
Causal factors contributing to adult literacy and under-education and instructional approaches appropriate for teaching adults to read.

READ 6050. Materials for Reading Instruction. 3 hours.
Prerequisite: READ 4010 or READ 6010 or permission of department.
Theoretical and practical examination of materials for teaching reading.

READ 6060. Content Area Literacy. 3 hours.
Theory and instructional strategies for enhancing reading, writing, speaking, and listening across various subjects in the school curriculum.

READ 6070. Middle School Reading. 3 hours.
Prerequisite: (READ 4010 or READ 6010) and permission of department.

Instructional practices, materials, and evaluation techniques for comprehensive reading programs in middle schools.

READ 6080. Teaching College Reading. 3 hours.
History of post-secondary reading programs, characteristics of college reading and college readers, and instructional methods and materials for improving college reading.

READ 6100. Foundations of Reading Instruction. 3 hours.
Reading instruction for students enrolled in the alternative master's program.

READ 6420. Literacy Development and Instruction in Early Childhood. 3 hours.
Emergent literacy development of preschool through grade three children; theory and research relevant to instructional approaches and practice.

READ 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

READ 7020. Practicum in Clinical Reading. 3 hours. 6 hours lab per week.
Prerequisite: READ 6020 or permission of department.
Supervised experience in assessing and tutoring children having problems learning to read.

READ 7110. Computer-Based Instruction in Reading Education. 3 hours.
Integration of computers into instruction to enhance literacy in elementary through secondary schools.

READ 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

READ 7460. Internship in Reading Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Supervised field-based experience related to teaching reading.

READ 7800. Sociopolitical Perspectives in Literacy Education. 3 hours.
Classroom practices and research that represent humanist, social constructionist, critical, and poststructural theories and their implications for literacy education.

READ 8100. Inquiry-Based Literacy. 3 hours.
Theoretic, pedagogic, and epistemologic implications of inquiry stances on literacy classrooms.

READ 8150. Topics in Computer-Based Reading and Writing. 3 hours.
Theory and research comparing printed and digital forms of written discourse and their effects on literacy.

READ(EPSY) 8170. Psychology of Reading. 3 hours.
Psychological foundations of reading ability, instructional methods, and materials.

READ 8300. Culture, Literacy, and the Classroom. 3 hours.
Prerequisite: READ 4010 or READ 6010 or permission of department.
Social and cultural factors that affect learning and teaching of literacy; application of multicultural perspectives to curriculum development and classroom literacy practice.

READ 8500. Research in College Reading. 3 hours.
Prerequisite: READ 6080 or permission of department.
Post-secondary reading with a focus on theoretical and methodological issues.

READ 8880. Theories of Reading Comprehension. 3 hours.
Prerequisite: READ 4010 or READ 6010 or permission of department.
Theoretical understandings of reading comprehension relevant to the development of curriculum, evaluation of teaching, and the design and interpretation of research.

READ 8990. Seminar in Reading Education. 1-2 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Contemporary topics related to literacy and to becoming active participants in the community of literacy scholars.

READ 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

READ 9010. Special Topics in Reading Education. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A topic related to emerging trends, practices, or research in an area related to literacy.

READ 9020. Advanced Topics in Reading Problems. 3 hours.
Prerequisite: Permission of department.
The literature pertaining to reading problems.

READ 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

READ 9600. Research in Reading Education. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Approved independent research in reading education in student's field of specialization through pure or applied research under the direction of a faculty member.

READ 9630. Critique of Research Literature in Reading Education. 3 hours.
Prerequisite: Permission of department.
Theory and research in reading education including classic and contemporary works.

READ 9700. Internship in Reading Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Advanced field-based experience related to the teaching of reading.

Science Education

Thomas R. Koballa, *Head*
David F. Jackson, *Graduate Coordinator,*
542-1763
(Aderhold Hall)

ESCI 4000/6000. Special Problems in Science Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Specialized study appropriate to the needs of the individual.

ESCI 4030/6030. Teaching Science to Students with Special Educational Needs. 3 hours.
Basis and practice of modifying science programs/teaching for students with special educational needs and introductory skills for modifying science programs/teaching strategies.

ESCI 4450/6450. Science Curriculum and Learning. 3 hours.
Undergraduate prerequisite: EPSY 2020 and EFND 2030.
Science curriculum models for students in grades 7 through 12 in relation to goals for science education and classroom practice. Development, selection, and evaluation of curricular materials based on research in learning.

ESCI 4460/6460. Methods of Science Teaching. 3 hours.
Undergraduate prerequisite: EPSY 2020 and EFND 2030.
Undergraduate corequisite: ESCI 3450 and ESCI 4450/6450.
Science instructional strategies and classroom assessment for students in grades 7 through 12. Classroom management, lesson planning, and safety in the science classroom.

ESCI 4470/6470. Special Topics in Science Teaching. 3 hours.
Selected modules on science teaching and learning on special topics such as applications of life science teaching; applications of physical science teaching; interdisciplinary science teaching; multimedia and computers in science teaching; reading, writing, and literacy in science.

ESCI 4480/6480. Technological Capabilities for Science Teaching. 3 hours.
Classroom applications of electronic technologies to science teaching, including analog audiovisual media, microcomputers, telecommunications networks, and their interactions. Technology-facilitated teaching strategies and curriculum integration in science teaching at the middle and secondary school levels.

ESCI 5460/7460. Science Education School-Based Internship. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: ESCI 3450 and ESCI 4450/6450 and ESCI 4460/6460.
Undergraduate corequisite: ESCI 5470/7470 and ESCI 5480/7480.
School-based experiences in grades 7 through 12 under the supervision of a University supervisor.

ESCI 5470/7470. Reflection on Science Teaching. 3 hours.
Prerequisite: ESCI 3450 and ESCI 4450/6450 and ESCI 4460/6460.
Undergraduate corequisite: ESCI 5460/7460 and ESCI 5480/7480.
Topics following student teaching include development as a reflective practitioner, preparation for being a first year teacher, and professional portfolio development.

ESCI 5480/7480. Philosophy and Leadership in Science Classroom Practice. 3 hours.
Prerequisite: ESCI 3450 and ESCI 4450/6450 and ESCI 4460/6460.
Undergraduate corequisite: ESCI 5460/7460 and ESCI 5470/7470.
Historical, cultural, social, political, and professional influences related to science classroom practice in grades 7 through 12.

ESCI 6200. Science, Technology, and Society. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Science, technology, and society (STS) related goals and activities in the K through 12 curriculum. Emphasis is placed on STS issues in the state of Georgia.

ESCI 6220. Marine Environmental Education. 3 hours.
Teaching strategies to interpret marine and coastal environments.

ESCI 6230. Environmental Science Education. 3 hours.
Prerequisite: Permission of department.
Environmental curriculum materials and how they can be implemented in the science classroom.

ESCI 6420. Science for Early Childhood Education. 3 hours.
Science content selection and organization, lesson and unit planning, science teaching and assessment materials, and the sociocultural construction of science knowledge by young children.

ESCI 6990. Research Seminar in Science Education. 3 hours.
Research and evaluation studies in science education.

ESCI 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ESCI 7020. Teaching Science in the Elementary School. 3 hours.
Prerequisite: Permission of department.
Instructional practices, materials, and assessment in teaching biological, physical, and earth sciences in the elementary school.

ESCI 7040. Teaching Strategies for Middle and Secondary School Science Teachers. 3 hours.
Prerequisite: Permission of department.
Improvement of instructional competencies of teachers of science in middle and secondary schools. Includes preparation in the planning and implementation of instructional strategies.

ESCI 7060. Technology in Science Education. 3 hours.
Prerequisite: ESCI 4480/6480 or EDIT 2020 or permission of department.
Analysis of research, practice, and policy issues regarding the role of electronic technologies in science teaching, curriculum development, and teacher education.

ESCI 7080. Curriculum Planning in Science Education. 3 hours.
Science curriculum from early childhood to high school. Social, psychological, philosophical, and practical influences on science curriculum are applied to the process of selecting and developing curriculum materials.

ESCI 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ESCI 7650. Applied Project in Science Education. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
A topic or problem in science education significantly related to the student's professional responsibilities.

ESCI 8060. Affective Domains in Science Education. 3 hours.
Values and attitudes embodied in science and technology education. Students will formulate objectives, use instructional techniques, and implement evaluation procedures directed toward important outcomes of the affective domain.

ESCI 8100. International Science Education. 3 hours.
Science education instruction, curriculum, and policy issues in countries with developed and emerging economies.

ESCI 8120. Science Writing and Literature Retrieval. 3 hours.
Scientific writing and literature retrieval techniques in the sciences. Familiarization with library resources and their use through manual and automated retrieval systems and on practical aspects of oral and written communications of scientific information.

ESCI 8200. Science Supervision. 3 hours.
Supervision and evaluation of school science programs.

(ESCI)EFND 8210. Multicultural Education Research. 3 hours.
Prerequisite: EFND 7200 and permission of department.
Using multicultural education research articles, chapters, and books; familiarization of seminal multicultural education research studies; and a critical analysis of the research done in one area are the foci of the course.

ESCI 8990. Research Seminar in Science Education. 1-6 hours. Repeatable for maximum 9 hours credit. 2 hours lab per week.
Prerequisite: Permission of department.
Integration of theoretical construction in research design and analysis into practical application to science education research, both published and proposed.

ESCI 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ESCI 9010. Problems of Teaching College Sciences. 3 hours.
Instructional practices in higher education with special emphasis on the teaching and learning of science. The establishment of appropriate goals, the selection of effective teaching methods, and the critical elements of assessment will serve as core topics.

ESCI 9020. History and Theory of Science Education. 3 hours.
Science education's historical and theoretical background and its influence on current science teaching practices. Examines contributions by science educators and learning theorists who have influenced classroom practices and curriculum development.

ESCI 9080. Science Curriculum Theory and Practice. 3 hours.
Prerequisite: Permission of department.
Historic and present day school science curricula. Literature, recent national reports, as well as national, state, and local standards, will be examined as a context which frames curriculum and its development.

ESCI 9300. Doctoral Dissertation. 3-15 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

ESCI 9600. Educational Research in Science Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research practicum while involved in a research problem, including activities such as searching the literature, collection of data, or processing data.

ESCI 9630. Critique of Educational Literature in Science Education. 3 hours.
Interpretation and evaluation of selected research and theoretical writings in science education.

ESCI 9700. Internship in Science Education. 1-9 hours. Repeatable for maximum 9 hours credit.
The development of instructional materials and their use in classroom settings based on the student's professional responsibility.

ESCI 9730. Science Teacher Education - Theory and Practice. 3 hours.
Research and practice of science teacher education, including historical perspectives, models for the preparation of teachers, and reform movements.

Social Foundations of Education

Ronald E. Butchart, *Head*
Margaret A. Wilder, *Graduate Coordinator,*
542-8931
(Aderhold Hall)

The department offers a PhD program in educational foundations and policy studies with emphases in either sociocultural studies of education or the history of U.S. education. The social foundations of education and policy studies draw on the research traditions and skills of anthropology, history, political science, sociology, philosophy, and related disciplines to deepen scholarly and public understanding of teaching, learning, schooling, and other forms of education. Examining ethics and values is integral to the study of the social foundations of education; questions of why are considered along with questions of how and what.

The PhD program is designed for any individual interested in advanced interdisciplinary study of education in its social, economic, cultural, political, ethical, and historical contexts. The program seeks to prepare high level researchers, scholars, teachers, policy analysts, and other educational and political leaders through the critical analysis of schools in society.

EFND 4000/6000. Special Problems in Social Foundations of Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Study of a problem in social foundations of education through library research or collection and analysis of primary data.

EFND 7010. Comparative and International Education. 3 hours.
Theory, policy, and practice in selected educational systems. Examines data and models from educational systems around the world. Critiques important themes: race, ethnicity, class, and gender; the role of education in national development; cross-cultural research; and major development in the methodology of comparative education.

EFND 7040. History of Education in the United States. 3 hours.
Examination of changing forms, philosophical orientations, and operations of education in the United States from its colonial origins to the present. Includes consideration of both formal and informal education, though the emphasis is on formal institutions. Encompasses education from early childhood through various forms of adult education, and education of majority and minority populations.

EFND 7100. Gender and Education. 3 hours.
Issues, research, theory, and policy on gender and education. Gender effects in socialization, schooling, and lifelong learning are analyzed for their implications for individuals, society, and culture.

EFND 7110. Race, Class, and Education. 3 hours.
Research and practice variations that impact individuals socially; constructed interactions, meaning and conceptions of racial and ethnic groups in United States society and social institutions. Topics include the historical, sociocultural, and schooling influences that inform and shape race, class, and schooling dynamics.

EFND 7120. Sociological Theories of Education. 3 hours.
Theories of social structure, stratification, and social change. Relationships among social institutions and educational processes and outcomes, and how various social institutions contribute to the maintenance of existing structured inequalities.

EFND 7140. The Social and Cultural Contexts of Teaching. 3 hours.
Perspectives of education and schooling practices that shape teacher-student relations. Teacher preparation programs and school structures in United States society and how these contexts influence and organize the classroom community.

EFND(ANTH) 7150. Anthropology of Education. 3 hours.
Cultural aspects of educational processes, institutions, and issues in societies around the world organized around comparative analysis. Topics include education as cultural process and social function, as sociocultural structure, as cultural transaction, and as cultural product.

EFND 7200. Multicultural Education in the United States. 3 hours.
Racial and cultural identity; ways oppression appears in students' lives and schooling policies and practices; connections between gender, feminist, and sexuality issues and education; relationships of empowerment to social changes, assessment, and evaluation; and associations among knowledge construction, culture, and the learning of school disciplines.

EFND 7210. Examining Race and Culture in Education Reform and Policy. 3 hours.
How race and culture have historically shaped and continue to shape school reform and policy formation. Encourages students to explore and critically examine the underlying assumptions about the purpose of schooling, and the beliefs that undergird educational reform systems historically, and in contemporary society.

EFND 8010. Philosophy of Education. 3 hours.
Philosophical questions concerning education. Topics include metaphysical, epistemological, and ethical issues of teaching, curriculum, and educational institutions.

EFND 8020. Seminar in History of Education in the United States to 1900. 3 hours.
Not open to students with credit in EFND 7020.
Examines changes and continuities in formal and informal educational structures from the early colonial era to the beginnings of progressive education. Gives particular consideration to the social, cultural, economic, and political contexts that sustained and transformed educational structures and opportunities, and includes female, Native American, and African American education.

EFND 8030. Seminar in History of Twentieth-Century Education in the United States. 3 hours.
Not open to students with credit in EFND 7030.

Examines the historical development of Progressive and post-Progressive education in the United States with particular emphasis on the economic, political, and social transformations that conditioned educational change during the century.

EFND 8040. Pragmatism and Education. 3 hours.
Educational writings of William James, Charles S. Pierce, and John Dewey.

EFND 8060. Social and Political Philosophies of Education. 3 hours.
Analyzes educational problems from standpoint of various social and political theories. Theorists considered are Locke, Hegel, Marx, Nietzsche, and Dewey. Educational problems examined include authority, curriculum, public good, social oppression, and equality. Class presentations and papers focus on application of political theory to contemporary educational issues.

EFND 8070. Ethics and Education. 3 hours.
Theories of value and evaluation, ethical discourse and arguments, and other uses of ethics in educational writings.

EFND 8080. Contemporary Philosophies of Education. 3 hours.
Recent developments in the field as revealed in current literature. Topics include foundationalism, self identity, multiculturalism, and equality as they pertain to education.

EFND 8100. History of Education in the United States: Historiography and Research Methods. 3 hours.
Examines changing historiographic traditions in the history of United States education and provides training in the methods of historical research.

EFND 8110. History of African American Education. 3 hours.
This seminar explores the history of formal and informal education by and for African Americans throughout their history, in both slavery and freedom. It examines aspirations, ideas, institutions, and the uses to which black education has been put by both the black community and by the dominant society.

EFND(CHFD) 8120. History of Childhood and the Family in the United States. 3 hours.
An examination of the changing experiences and forms of childhood and family life, as mediated by class and ethnicity,over the course of United States history. Students will seek to relate those changing experiences and forms to their political, economic, and schooling contexts, and to consider explanations for their historical alterations.

EFND 8130. Education as Democracy. 3 hours. 2 hours lecture and 2 hours lab per week.
Conceptions of public education congruent with principles of democratic society. Topics include foundational works, constitutional interpretations, traditional canons, multiculturalism, post-modernism/critical theory, and relationships between school reform and perspectives on American democracy.

EFND 8150. Education and Cultural Knowledge. 3 hours.
Transmission and transformation of cultural knowledge and symbolic orders in schools and other educational institutions around the world. How culture interacts with beliefs and knowledge and how teachers' and students' belief systems and cultural models interact in social contexts to contribute to continuity and change.

EFND 8160. Ethnography of Educational Organizations. 3 hours.
Educational organizations around the world: their social structures, functions, and ideologies, supplemented by analysis of youth organizations and other agencies with educational goals.

EFND(ESCI) 8210. Multicultural Education Research. 3 hours.
Prerequisite: EFND 7200 and permission of department.
Using multicultural education research articles, chapters, and books; familiarization of seminal multicultural education research studies; and a critical analysis of the research done in one area are the foci of the course.

EFND 8330. School Reform and Public Education. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Current attempts to reform public education. Topics include elements of reforms and views of education, policies that obstruct or enhance change, and purposes and consequences of reforms as challenges to conceptions of education, schooling, and society.

EFND 8400. Critical Race Theory and Education. 3 hours.
The theoretical and ideological debates surrounding race identity, oppression, and power relationships. Particular attention is given to race and class theory analysis grounded in American culture, education, and society.

EFND 8450. Cultural Politics of Post-Colonial Education. 3 hours.
Prerequisite: EFND 7100 or EFND 7110.
Education as a key institutional and discursive site where cultural forms and practices are constituted,

transmitted, and transformed. Major twentieth-century options for theorizing cultural politics will be applied to a study of intersections of race, class, and gender, and their relationships with power structures as manifested in educational contexts.

EFND 8500. Research Design in Social Foundations of Education. 3 hours.
Theoretical and ethical principles involved in designing and conducting foundations of education research: research question development, research document collection, literature reviews, sampling strategies, data collection. A variety of research approaches will be considered.

EFND 8990. Research Seminar in Social Foundations of Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research design issues in social foundations of education.

EFND 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

EFND 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Dissertation writing under the direction of the major professor.

EFND 9600. Research in Social Foundations of Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Directed independent research in social foundations of education.

EFND 9630. Critique of Educational Literature in Social Foundations of Education. 3 hours.
Prerequisite: Permission of department.
Research and other literature in social foundations of education.

EFND 9700. Internship in Social Foundations of Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Supervised internship in instruction, curriculum development, supervision, or evaluation in social foundations of education.

Social Science Education

Kathleen B. deMarrais, *Head*
Ronald L. Van Sickle, *Graduate Coordinator,* 542-6486
(Aderhold Hall)

The Department of Social Science Education offers three levels of graduate degree programs. Although each degree program has a core of required coursework, students can choose from a variety of other courses to build on the previous academic work and current interests. The degree programs are: Master of Arts (30 semester hours/thesis); Master of Education (Plan Aó33 semester hours/applied project; Plan Bó36 semester hours; and Plan B Modifiedó36 semester hours plus additional coursework required for certification); Specialist in Education (30 semester hours beyond masters); Doctor of Education; and Doctor Philosophy.

ESOC 4000/6000. Special Problems in Social Science Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of department.
Intensive study of a problem in social science education through library research or collection and analysis of primary data.

ESOC(HIST) 4150/6150. Teaching United States History. 3 hours.
Classic historiography and current debates among historians over major themes and events in United States history. Examination of ways in which this historical scholarship can be incorporated into social studies teaching. Evaluation of materials and methods used to teach United States history in secondary and middle schools.

ESOC 4350/6350. Social Science Curriculum in Secondary Schools. 3 hours.
Undergraduate prerequisite: ESOC 2450 or permission of department.
Current status of and trends in the social science curriculum in secondary schools, with illustrations of selected curriculum models for both cognitive and affective learning.

ESOC 4360/6360. Methods of Teaching Social Science in Secondary Schools. 3 hours.
Undergraduate prerequisite: Permission of department.
Instructional objectives and the examination and application of instructional procedures, utilization of media, and methods of evaluation.

ESOC 4400/6400. Teaching Social Studies in the Middle Grades. 3 hours.
Undergraduate prerequisite: Permission of department.
Instructional procedures and materials focusing upon the cognitive and affective processes relevant to middle grades social studies education.

ESOC 5010/7010. Teaching of Geography. 3 hours.
Undergraduate prerequisite: Permission of department.
Geographic principles and the history of geography in the school curriculum; the literature of the field, including textbooks; the application of special techniques; and geographic evaluation.

ESOC 5200/7200. Economic Education in the Social Science Curriculum. 3 hours.
Instructional strategies and materials for teaching basic economic concepts in an integrated kindergarten through grade 12 social science curriculum, with emphasis on utilizing a decision-making model for analyzing contemporary economic problems.

ESOC 5460/7460. Student Teaching in Social Science Education. 1-15 hours. Repeatable for maximum 20 hours credit.
Undergraduate prerequisite: Permission of department.
Teaching social studies in the middle or secondary grades under supervision of school and university professional personnel.

ESOC 5520/7520. Teaching Politics, Government, and Citizenship. 3 hours.
Undergraduate prerequisite: Permission of department.
Rationale for and resources in political science and civic/citizenship education, the role of teachers and schools in political socialization, and teaching procedures for instruction on state and local citizenship in middle grades and high schools.

ESOC 5850/7850. Education, Citizenship, and Culture in the USA and England. 3-6 hours.
An examination of the K-12 education systems of the United States and England in comparative perspective. Particular attention to the issue of education for citizenship will be examined. In addition, the impact of national politics, culture, and society on public schooling will be explored.

ESOC 6380. Computer Technology Applications in Social Science Education. 3 hours. 2 hours lecture and 2 hours lab per week.
Applications of computer technology for teaching social studies in middle and secondary grades, including instructional design, adaptation, and authoring; accessing resources through computer technology.

ESOC 6990. Research Seminar in Social Science Education. 3 hours.
Fundamentals of research in social science education.

ESOC 7000. Master's Research. 1-9 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ESOC 7050. Problems of Teaching Secondary Social Studies. 3 hours.
Selection, utilization, and evaluation of teaching procedures in history and the social sciences to various ability levels of students.

ESOC 7080. Curriculum Planning in Social Sciences. 3 hours.
Selection, utilization, and evaluation of curricular content and materials in history and the social sciences appropriate to various ability levels of pupils.

ESOC 7250. Simulations and Role Playing in the Social Studies. 3 hours.
Instructional use of simulations and role playing within K-12 social studies. Attention given to planning and implementation of traditional and computer-based simulations. Skills will be developed in the technique of role playing. Issues related to design, theory, and research will be explored.

ESOC 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ESOC 7420. Social Studies for the Young Child. 3 hours.
This course engages practicing and preservice teachers in an exploration of the goals, content, and methodologies of elementary social studies.

ESOC 7650. Applied Project in Social Science Education. 3 hours.
Prerequisite: Permission of department.
A topic or problem in social science education significantly related to the student's professional responsibilities.

ESOC 8010. History of Social Studies Education. 3 hours.
Prerequisite: Permission of department.
Major themes, ideas, and personalities in the historical development of curriculum and instruction in social studies in the United States since 1880, including comparisons to selected other nations.

ESOC 8250. Values Education for Citizenship. 3 hours.
Prerequisite: Permission of department.
Theory, research, and classroom practice in values education, focusing specifically on the development of values needed for citizenship in a democracy. Various contemporary and historic approaches to values education, curriculum materials, and state and district policies.

ESOC 8990. Research Seminar in Social Science Education. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research design problems in social science education.

ESOC 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ESOC 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

ESOC 9600. Research in Social Science Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Directed independent research in social science education.

ESOC 9630. Critique of Educational Literature in Social Science Education. 3 hours.
Prerequisite: Permission of department.
Review and analysis of research and other literature in social science education.

ESOC 9700. Internship in Social Science Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Supervised internship in instruction, curriculum development, supervision, or evaluation in social science education.

Social Work Education

Larry G. Nackerud, *Graduate Coordinator,*
542-5470
(Tucker Hall)

Course of study requirements for students interested in school social work can be obtained by contacting the Graduate Coordinator.

ESWK 7155. Practicum in School Settings. 1-5 hours. Repeatable for maximum 15 hours credit.
Not open to students with credit in SOWK 7055.
Prerequisite: Permission of department.
Field experience in schools integrating knowledge of human behavior and interventive practice models appropriate for school settings.

ESWK 7417. Home, School, and Community Practice. 2-3 hours. Repeatable for maximum 3 hours credit.
Relationships among home, school, and community systems. Identifies approaches to linking those systems in the best interest of children/youths.

Special Education

John Langone, *Head*
David L. Gast, *Graduate Coordinator,*
542-5069
(Aderhold Hall)

The Department of Special Education offers the following degrees with a major in special education: MEd, EdS, and PhD. Students may pursue a master's degree with the thesis option through the MA in education degree.

SPED 4000/6000. Directed Study in Special Education. 1-10 hours. Repeatable for maximum 10 hours credit.
Undergraduate prerequisite: Permission of department.
Specialized training appropriate to the needs of selected individuals.

SPED 7000. Master's Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

SPED 7010. Clinical Assessment in Special Education. 3 hours.
Prerequisite: Permission of department.
Corequisite: SPED 7010L.
Theory and practice in the use of standardized and dynamic evaluation techniques required for the assessment and program planning of individuals with disabilities.

SPED 7010L. Special Education Assessment Practicum Laboratory. 1 hour. 1 hour lab per week.
Prerequisite: Permission of department.
Corequisite: SPED 7010.
Laboratory in the assessment of special education.

SPED 7100. Early Childhood Special Education. 3 hours.
Prerequisite: Permission of department.
Seminar in early childhood special education, including history of and rationale for early intervention from birth through age five, typical and atypical early development, family and diversity issues. Emphasis is on assessment, including screening and play-based assessment.

SPED 7110. Mental Retardation. 3 hours.
Prerequisite: Permission of department.
The characteristics of individuals with mental retardation across the lifespan. Theory and current issues as they relate to definition, assessment, eligibility, diversity, service delivery, and family needs.

SPED 7120. Learning Disabilities. 3 hours.
Prerequisite: Permission of department.
Characteristics of individuals with learning disabilities across the lifespan. Theory and current issues as they relate to definition, assessment, eligibility, diversity, service delivery, and family needs.

SPED 7130. Behavioral Disorders. 3 hours.
Prerequisite: Permission of department.
The characteristics of individuals with behavioral disorders across the lifespan. Theory and current issues as they relate to definition, assessment, eligibility, diversity, service delivery, and family needs.

SPED 7200. Methods and Curriculum in Early Childhood Special Education. 3 hours.
Prerequisite: SPED 7100 and permission of department.
Program models, instructional methods, and curricula in early childhood special education. Emphases are on developmentally appropriate practice, family systems, diversity, transitions, and methods for collaboration.

SPED 7210. Methods for Teaching Functional Skills. 3 hours.
Prerequisite: Permission of department.
Behavioral psychology learning principles and procedures in the design of instructional programs to teach basic life skills. Focus is on data-based instructional strategies that facilitate skill acquisition, fluency, maintenance, and generalization.

SPED 7220. Methods for Teaching Academic Skills. 3 hours.
Prerequisite: Permission of department.
Research-based methods and materials used to teach academic skills to persons with mild disabilities across different school and vocational settings.

SPED 7230. Methods for Teaching Social Skills. 3 hours.
Prerequisite: Permission of department.
Behavioral analysis as applied to socially significant behavior. Emphases include skills curricula, social behavior across cultures, school- and community-based instruction, generalization of skills, and validation of intervention procedures.

SPED 7240. Methods for Postsecondary Transition. 3 hours.
Prerequisite: Permission of department.
Instructional procedures, demographics, social policies, and school and post-school factors that predict successful transitions for individuals with disabilities. Collaborative transition models, supported employment, independent and supported living, education/training, and community-based instruction are emphasized, as are service-delivery issues related to diverse populations.

SPED 7240L. Postsecondary Transition Laboratory. 1-3 hours. Repeatable for maximum 3 hours credit. 1-3 hours lab per week.
Prerequisite: Permission of department.
Development and/or implementation of curricula models and/or transition models.

SPED 7250. Written Language Disorders. 3 hours.
Prerequisite: Permission of department.
The literature on the psychology of written language for individuals with developmental disabilities from diverse backgrounds and cultures.

SPED 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

SPED 7440. Practicum in Special Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Supervised field experience related to teaching individuals with disabilities.

SPED 7460. Internship in Special Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: SPED 7440 and permission of department.
Supervised culminating field experience related to teaching individuals with disabilities.

SPED 7500. Advanced Technology in Special Education. 3 hours.
Prerequisite: [(SPED 4040 and SPED 4040L) or (EDIT 2020 or EDIT 6150)] and permission of department.
Technology-based solutions for persons with disabilities. Emphases include technological applications of situated learning, system analysis, and issues related to diversity.

SPED 7500L. Advanced Technology in Special Education Laboratory. 1-3 hours. Repeatable for maximum 3 hours credit. 1-3 hours lab per week.
Prerequisite: Permission of department.
Specialization in technology matching the participants' degree programs.

SPED 7600. Topics in Special Education. 3 hours.
Prerequisite: Permission of department.
Critical discussion of contemporary and cutting edge issues of people with disabilities.

SPED 7630. Critique of Literature in Special Education. 3 hours.
Prerequisite: Permission of department.
Analysis of literature related to contemporary issues in special education.

SPED 7650. Applied Project in Special Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research study of a topic or problem in special education related to the student's professional work.

SPED 8000. Directed Study in Special Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Specialized and advanced study in special education.

SPED 8320. Laws Affecting Individuals with Disabilities. 3 hours.
Prerequisite: Permission of department.
Court rulings, legislative enactments, administrative regulations, and their impact on the function of general and special education in providing public education for individuals with disabilities.

SPED 8370. Single-Subject Research Methodology in Special Education. 3 hours.
Prerequisite: Permission of department.
Research methods related to individuals with disabilities that employ single-subject research methodology. The design of a research proposal that uses single-subject research methodology.

SPED 8990. Research Seminar in Special Education. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Current issues in special education research.

SPED 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

SPED 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

SPED 9600. Issues and Trends in Special Education. 3 hours.
Prerequisite: Permission of department.
Contemporary issues and trends impacting the education of people with disabilities.

SPED 9800. Advanced Practicum in Special Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Practicum in special education at an advanced level.

SPED 9930. Internship: College Teaching in Special Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A supervised internship involving college teaching of special education.

SPED 9940. Internship: Supervision of Special Education Teachers. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Supervised internship concerning the supervision of students in field settings.

College of Environment and Design

John F. Crowley, *Dean*
(Caldwell Hall)

The College of Environment and Design will enlarge the universityís strengths in basic and applied research and teaching relative to the environment. The college will also enhance ecological and environmental programs and opportunities at the university. The goals of the college include becoming a leading center for creative and responsible research in understanding, planning, design, historic preservation, and management of natural and cultural environments and their interactions; synthesizing information about environments; and providing an atmosphere and location for collaborative cross-disciplinary studies.

The principal units of the college include the School of Environmental Design, the Institute of Ecology, and the Academic of the Environment and Design. The following degrees are administered by the School of Environmental Design: Master of Landscape Architecture (initiated 1954) and Master of Historic Preservation (initiated 1982). The Institute of Ecology administers the following degrees: Master of Science and Doctor of Philosophy degrees with a major in ecology and Master of Science degree with a major in conservation ecology and sustainable development. A graduate certificate in conservation ecology and sustainable development is also available.

School of Environmental Design

Allen D. Stovall, *Graduate Coordinator,* (MLA) 542-4704
John C. Waters, *Graduate Corrdinator,* (MHP) 542-4706
(Caldwell Hall)

The School of Environmental Design provides professional degree programs in landscape architecture and historic preservation.

The discipline of landscape architecture is both an art and a science, and includes the creation and management of environments which meet human needs and are ecologically sensitive. Whether practicing in urban settings or natural environments, the landscape architectís tools blend horticultural, engineering, and artistic skills with an understanding of natural processes and a sense to stewardship. The school has offered graduate education in this field since 1954.

Within the past forty years, the continued loss of irreplaceable historic resources in both built and natural environments has created a demand for preservation professionals trained to identify and evaluate historic resources and to develop strategies that will insure the conservation and preservation of these resources. As one of eighteen centers for the education of preservation professionals in the nation, the School of Environmental Design offers three program programs in historic preservation as well as a joint program in preservation and law in cooperation with the Universityís School of Law.

Master of Landscape Architecture (MLA): Applicants are accepted into the program from both design and non-design backgrounds. Those entering without the BLA (or equivalent degree) are admitted into the three-year degree program. Applicants holding a recent BLA degree enter directly into the second year of study. Applicants holding the BLA degree with ten or more years' responsible professional experience may apply for a one-year accelerated program emphasizing specialization.

The MLA program is structured around a sequence of design studios, lecture and seminar courses and electives. Design studios are supported by required courses in theory, landscape construction, plant communities, professional practice, and research methods and applications. Areas of specialization are supported by elective courses both within the School and from other departments.

All candidates are required to have their applications completed prior to March 31 of the year they plan to enter. Completion prior to December 30 is to the students advantage. Graduate Record Examination scores are a required part of a complete application.

A limited number of scholarships and assistantships are administered by the School and the University.

Master of Historic Preservation (MHP): Students from diverse backgrounds are often surprised to discover the manner in which their undergraduate degree may either relate directly to historic preservation or provide skills useful in the pursuit of historic preservation as a career. Thus, interested individuals are encouraged to visit the School to explore their potential for success in this new career area. As an area of academic study, historic preservation has been available for just three decades. Within this period, there has been a rapid expansion of career opportunities at the various levels of government as well as within the private sector. The Academic Common Market makes it possible for many students to attend at in-state rates.

The two-year program of study, required for the Master of Historic Preservation degree, provides a comprehensive program which includes an internship as well as a thesis. Financial assistance, in the form of research assistantships, is available on a competitive basis. Students interested in applying for assistantships for the following year must have been accepted for admission by April 1.

In addition to the MHP program, the School, in cooperation with the School of Law, offers a joint JD/MHP four-year combined degree as well as a Preservation Studies Certificate Program. The School is a member of the National Council of Preservation Educators and meets their standards for academic programs in historic preservation.

Request information specifically about the MLA or MHP program from the Graduate Studies Office, School of Environmental Design, Caldwell Hall, University of Georgia, Athens, GA 30602, (706) 542-4720, donnag@arches.uga.edu.

Environmental Design

EDES 4090/6090. Architectural Design. 4 hours. 8 hours lab per week.
Undergraduate prerequisite: LAND 4060 or LAND 6020.
Major design determinants in architecture. Inquiry into structural, functional/programmatic, theoretical, and environmental issues will be focused on developing an understanding of the relationship between architecture and landscape.

EDES 4100/6100. Historic Preservation Design Studio. 4 hours. 8 hours lab per week.
An advanced design studio focused on contemporary preservation issues. Emphasis will be placed on new design and community planning.

EDES 4250/6250. Advanced Computer-Aided Design. 3 hours. 1 hour lecture and 4 hours lab per week.
Undergraduate prerequisite: EDES 3230 or EDES 6220.
Lecture/studio in the use of computer-aided design software for the development of environmental design and land planning projects.

EDES 4260/6260. Computer Rendering and Animation. 3 hours. 1 hour lecture and 4 hours lab per week.
Undergraduate prerequisite: EDES 3230 or EDES 6220.
Lecture/studio in the use of computer rendering and animation software for the visualization of site design and land planning projects.

EDES 4270/6270. Environmental Design Uses of Geographic Information Systems. 3 hours. 1 hour lecture and 4 hours lab per week.
Undergraduate prerequisite: EDES 3230 or EDES 6220.
Lecture/studio in the use of geographic information systems software for the development of environmental design and land planning projects.

EDES 4610/6610. Vernacular Architecture. 3 hours.
Vernacular or folk architecture around the world and through history. Emphasis will be on how built form is a response to natural/physical and socio-cultural determinants. Both anthropological and art historical approaches to the subject will be explored.

EDES 4620/6620. Evolution of American Architecture. 3 hours.
Undergraduate prerequisite: (EDES 2510 and EDES 2520) or EDES 6510.
History of American architecture from colonial times to World War II. Emphasis is on the development of

both built form and the intellectual and social currents influencing that form.

EDES 4630/6630. The History and Theory of Twentieth-Century Architecture. 3 hours.
Undergraduate prerequisite: EDES 2520 or permission of school.
The major monuments and theories of world architecture from the early modern period to the present. Major monuments will be presented in slide lecture; theory in readings and discussions.

EDES 4640/6640. The History of Urban Planning. 3 hours.
Undergraduate prerequisite: (EDES 2510 and EDES 2520) or EDES 6510 or permission of school.
Major movements and monuments in the history of urban planning. The first half of the course will cover the world from ancient times to the present; the second half will focus on America from colonial times to the present.

EDES 4650/6650. City Planning. 3 hours.
The study of urban places. Planning processes and regulatory tools and techniques used by urban communities to achieve community goals and objectives.

EDES 4660/6660. Environment and Behavior: Theory and Practice. 2 hours.
The interactions and relationships between people and their physical environments. Focuses on the social, behavioral, and cultural aspects of design.

EDES 4670/6670. History of Landscape Technology and Management. 2 hours.
Undergraduate prerequisite: EDES 2520 or EDES 6510.
Technological influence upon attitudes toward nature and natural resources that result in a changed landscape.

EDES 4680/6680. Conservation of Culturally Significant Resources in Rural Areas. 2 hours.
Undergraduate prerequisite: Junior standing.
The cultural evolution of rural landscapes in the United States. Exploration of approaches and methodologies used in identifying and protecting significant features, both natural and cultural, in a constantly changing environment.

EDES 4920/6920. Directed Study in Computer Application. 1-3 hours. Repeatable for maximum 9 hours credit. 2-6 hours lab per week.
Undergraduate prerequisite: EDES 3230 or EDES 6220.
Supervised research into computer-generated visualizations as they may be applied in environmental design and land planning.

EDES 6510. Evolution of the American Landscape. 2 hours.
Corequisite: LAND 6010.
The ways in which Americans of various historical periods and in diverse places have shaped the landscape to accommodate specific needs and to express cultural attitudes, values, and aspirations.

EDES 6520. Ideas of the Garden. 2 hours.
Corequisite: LAND 6020.
The garden as an archetypal concept through which different cultural groups have expressed their understanding of the world and of human history from ancient times to the present.

EDES 6530. Ideas of Nature. 2 hours.
Corequisite: LAND 6030.
The idea of nature as a cultural construct that is continually subject to reappraisal and revision with critical implications for the environmental sciences, the design arts, and humanistic studies.

EDES 6540. Ideas of Community and Place. 2 hours. 1 hour lecture and 2 hours lab per week.
Corequisite: LAND 6040.
The relationship between concepts of community and the physical environments (home, village, town, city, region) that may be designed in ways that foster personal and societal commitment to community and place.

EDES 6550. History of the Built Environment I. 3 hours.
Architecture and landscape from ancient times through the Renaissance. Emphasizes relationship between the built environment and culture, aesthetics, the environment.
Non-traditional format: Students attend three hours of lecture each week and take exams, plus one hour of discussion each week dealing with advanced readings in the field and write a paper grappling with research methods.

EDES 6560. History of the Built Environment II. 3 hours.
Prerequisite: EDES 6550.
Architecture and landscape from the seventeenth century to the present. Emphasizes relationship between the built environment and culture, aesthetics, the environment.
Non-traditional format: Students attend three hours of lecture each week and take exams, plus one hour of discussion each week dealing with advanced readings in the field and write a paper grappling with research methods.

EDES 6900. Research Strategies. 1 hour. 2 hours lab per week.
Prerequisite: Permission of school.
Alternative methods of inquiry appropriate to environmental design.

EDES 7350. Landscape Management. 3 hours. 1 hour lecture and 4 hours lab per week.
Landscape management techniques with an emphasis on the values of environmental conservation and historic preservation.

EDES 7550. Values in Environmental Design. 2 hours. 1 hour lecture and 2 hours lab per week.
Corequisite: LAND 7050.
The societal values that attach cultural significance to some places but not others and the forms (scientific, literary, artistic) through which these judgements are promulgated or subverted.

Historic Preservation

HIPR 4000/6000. Introduction to Historic Preservation. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: Permission of school.
Historic preservation theory, its evolution and practice, and its relationship to the concept of environmental quality.

HIPR 6025. Preservation Perspectives. 1 hour.
Prerequisite or corequisite: HIPR 4000/6000.
Investigation of current professional practice and research directions in the field of historic preservation.

HIPR 6060. Basic Preservation Graphics. 3 hours. 1 hour lecture and 4 hours lab per week.
Introduction to basic manual and computerized drafting skills and the application of Adobe Photoshop.

HIPR 6100. Cultural Resource Assessment. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: HIPR 4000/6000.
Identification, assessment, and documentation of cultural resources at all scales from historic interiors and individual sites to distinct districts and entire townscapes.

HIPR 6150. Rural Preservation. 3 hours.
Prerequisite: Permission of school.
The evolution of the rural historic landscape, its aesthetic values, preservation problems, and legal and financial resources available for landscape preservation. Open space planning will be emphasized.

HIPR 6200. Preservation Law. 3 hours.
Prerequisite: HIPR 4000/6000.
Analysis of significant national, state, and local preservation laws and ordinances, and the legal functions for these laws; major legal challenges past, current, and anticipated; and, a review of the positive and negative effects of the application of various legal measures on the historic environments they protect.

HIPR 6320. Historic Resource Documentation. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: EDES 6210 or permission of school.
The skills and processes of documenting historic resources at basic, intermediate, and archival levels, utilizing both graphic and photographic techniques.

HIPR 6350. Building Materials Conservation. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: HIPR 4000/6000.
Restoration and rehabilitation theory and practice. Emphasis is on the history of building technology and the identification and treatment of common conservation problems in historic structures.

HIPR 6510. Preservation Economics/Grant Writing. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: HIPR 4000/6000.
The economic impact of preservation upon communities, its measurement in terms of both financial and environmental benefits and the financial needs and fiscal management of preservation organizations and agencies, with emphasis upon the development and preparation of funding and/or grant proposals.

HIPR 6600. Design Guidelines. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: HIPR 4000/6000 or permission of school.
Theory and practice of compatible change within historic districts, the evaluation and documentation of visual character, how to set design goals and produce design guidelines regarding additions to historic buildings, rehabilitation and restoration, new construction, improving the compatibility of non-contributing buildings, signage, urban design and setting, and landscapes.

HIPR 6720. Preservation Advocacy/Professional Practice. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: HIPR 4000/6000.
Preservation advocacy strategies and techniques with emphasis on application to preservation issues and problems and the improvement of individual communication, behavioral, and management skills, including conflict resolution. Beyond advocacy there will be a focus upon the ethical standards and operational practices expected of preservation professionals.

HIPR 6750. Special/Independent Studies. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of school.
Individual special studies or projects which provide the opportunity to pursue research interests in historic preservation.

HIPR 6751. Special/Independent Studies. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of school.
Individual special studies or projects which provide the opportunity to pursue research interests in historic preservation.

HIPR 6752. Special/Independent Studies. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of school.
Individual special studies or projects which provide the opportunity to pursue research interests in historic preservation.

HIPR 6800. Contemporary Preservation Perspectives. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: Permission of school.
Preservation issues, preservation practice, and special preservation topics as related to the concerns of preservation professionals, preservation organizations and agencies, and the protection and interpretation of regional historic resources.

HIPR 6850. Historic Preservation Planning Studio. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: HIPR 4000/6000 or permission of school.
The theory and techniques of preservation planning. Emphasis on survey of historic resources and development of community preservation programs.

HIPR 7000. Master's Research. 1-6 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of school.
Research while enrolled for a master's degree under the direction of faculty members.

HIPR 7300. Master's Thesis. 1-3 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of school.
Thesis writing under the direction of the major professor.

Landscape Architecture

LAND 4070/6070. Garden Design in America. 4 hours. 8 hours lab per week.
Undergraduate prerequisite: LAND 4060 or LAND 6020.
Design traditions which have shaped American gardens over the past 200 years with emphasis on the twentieth century, and plants, uses, design forms, and environmental conditions through which these traditions have been expressed. Designing gardens informed by traditional models.

LAND 4080/6080. Gardens as Nurturing Environments. 4 hours. 8 hours lab per week.
Undergraduate prerequisite: LAND 4060 or LAND 6020.
Physical, psychological, perceptual, and cultural influences of garden design, with an emphasis on gardens for healing, play, discovery/learning, and other sensory/therapeutic stimuli.

LAND 4150/6150. Land Development Studio. 4 hours. 8 hours lab per week.
Undergraduate prerequisite: LAND 4060 or LAND 6340.
Land development process. Landscape architecture and real estate students prepare a report that includes absorption, targeted market, estimates, financial feasibility, site planning, design, and building types to be reviewed by a visiting jury of developers, designers, planners, and brokers.

LAND 4400/6400. Plant Communities of the Southeast. 3 hours. 1 hour lecture and 4 hours lab per week.
Undergraduate prerequisite: LAND 4360 or LAND 6320.
The plant communities of the southeastern United States, with emphasis on botanical and aesthetic characteristics, factors affecting community composition, and community dynamics.

LAND 4580/6580. Landscapes in Painting, Poetry, Literature, and Design. 2 hours.
Undergraduate prerequisite: EDES 1500 or EDES 6520.
The appreciation and understanding of nature, landscape, and garden in painting, poetry, and literature. Study of how changing attitudes to the environment affect aesthetic appreciation of landscape and are reflected in the design of gardens and the description of landscapes in art and literature.

LAND 4710/6710. Professional Practice. 2 hours.
Undergraduate prerequisite: Junior standing.
The legal environment of business focusing on public and private law. Professional relations during project management, resolution of disputes, the court system, torts, real property/liens, contract law, specification writing, insurance bonds, business organizations, ethics, and professional registration.

LAND 4800/6800. Field Study in Contemporary Landscape Architecture. 3 hours. 3 hours lab per week.
Undergraduate prerequisite: (LAND 2020 and EDES 2520) or permission of school.
Current and historic works and individuals in the fields of landscape architecture, architecture, historic preservation, and urban design in the United States. The class will visit significant projects, offices, national parks, and landmarks during a ten to fourteen-day trip to another region of the country.

LAND 4810/6810. Field Study in American Garden Design. 2 hours.
Undergraduate prerequisite: LAND 4070/6070.
Recognized professional firms, garden designers, and gardens central to the evolution and current culture of garden design in America.

LAND 4910/6910. Independent Project. 1-6 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Permission of school.
Special study or project under the direction of faculty.

LAND 4911/6911. Independent Project. 1-6 hours.
Undergraduate prerequisite: Permission of school.
Special study or project under the direction of faculty.

LAND 4912/6912. Independent Project. 1-6 hours.
Special study or project under the direction of faculty.

LAND 6010. Landscapes. 4 hours. 8 hours lab per week.
Corequisite: EDES 6510.
Design, an appreciation of materials and an understanding of processes. Studio projects selected to expose students to the wide range of approaches to design and landscapes.

LAND 6020. Gardens. 4 hours. 8 hours lab per week.
Corequisite: EDES 6520.
The garden as the central image and metaphor in landscape architecture. Studio projects selected to explore the image and the metaphor in a variety of social and environmental contexts.

LAND 6030. Nature and Sustainability. 4 hours. 8 hours lab per week.
Corequisite: EDES 6530.
Concepts of nature and their implications for landscape architecture, with particular attention to the issue of sustainability. Projects selected to investigate alternative design strategies in a variety of environments from wilderness to city center.

LAND 6040. Community and Place. 4 hours. 8 hours lab per week.
Corequisite: EDES 6540.
Concepts of community and place in architecture and urban design and their implications for landscape architecture. Projects selected to investigate alternative design strategies at a variety of scales and densities of habitation, from a single dwelling unit to a city.

LAND 6210. Representation and Communication I. 3 hours. 1 hour lecture and 4 hours lab per week.
Not open to students with credit in EDES 6210.
Drawing, computer graphics, and other methods of representing and communicating design ideas.

LAND 6220. Representation and Communication II. 3 hours. 1 hour lecture and 4 hours lab per week.
Not open to students with credit in EDES 6220.
Prerequisite: EDES 6210.
Exploration of a variety of methods of representing and communicating design ideas.

LAND 6310. Landscape Ecology: Materials and Processes. 3 hours. 1 hour lecture and 4 hours lab per week.
Landforms, geology, hydrology, soils, and biotic communities, with an examination of ecological concepts and their application at the landscape scale.

LAND 6320. Landscape Design: Materials and Processes. 3 hours. 1 hour lecture and 4 hours lab per week.
The history and ecology of plants and related materials associated with the design of gardens.

LAND 6330. Landscape Construction. 3 hours. 1 hour lecture and 4 hours lab per week.
Landscape construction and engineering through inquiry into their ability to implement values of sustainability.

LAND 6340. Landscape Engineering. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: LAND 6330.
Applications of landscape construction and engineering through inquiry into their ability to implement values of community and place.

LAND 6700. Landscape Architecture Internship. 3 hours.
Prerequisite: Permission of school.
Professional office experience under the supervision of licensed landscape architects or related practitioners.

LAND 7000. Master's Research. 3-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of school.
Research while enrolled for a master's degree under the direction of faculty members.

LAND 7050. Design and Meaning. 4 hours. 8 hours lab per week.
Corequisite: EDES 7550.
A studio inquiry into how a place acquires meaning and significance, and the implications of this for landscape architecture. Projects selected to investigate alternative design strategies in a variety of historical contexts from "old" to "new" places.

LAND 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of school.
Thesis writing under the direction of the major professor.

LAND 7850. Practicum in Teaching Landscape Architecture. 3 hours.
Prerequisite: Permission of school.
Experience in teaching undergraduate professional skills under the direction of a faculty mentor.

Ecology

C. Ronald Carroll, *Director*
William K. Fitt, *Graduate Coordinator,*
542-3328
(Ecology Building)

For more than thirty years, the Institute of Ecology has been a center for interdisciplinary team research which deals holistically with humans and the environment. Recently the College of Environment and Design was formed, and all degrees are now offered through this academic unit.

The PhD degree allows students to develop a broad background in ecology and related disciplines. All requirements for admission are the same as for the Graduate School with the exception of the GRE score. The minimum required GRE score for admission for the PhD degree is 1100. As part of the curriculum, students must take ECOL 8000, Topics in Modern Ecology, but the remainder of the program of study is designed to fit the individual needs of the student. Facilities of the Institute of Ecology, and at off-campus facilities such as the Savannah River Ecology Laboratory, the Joseph Jones Ecological Research Center, the Coweeta Hydrologic Laboratory, the University of Georgia Marine Institute, and elsewhere, provide students unusual opportunities for ecological training. The program has attracted outstanding students and produced exceptionally talented ecological scientists, many of whom are now leaders in the field.

A MS degree program in ecology was recently approved by the Board of Regents. It is focused on training in the natural environment, as well as the integration of natural and socio-economic systems. Students address specially selected research topics which are amenable to a two-year training activity. These topics require that they learn research design and encourage the use of special skills, monitoring techniques, analysis, and interpretation of ecological/environmental data. Graduate students set their results into the context of ecological and human ecology. Another degree offered is the MS in conservation ecology and sustainable development. This is an integrative training program which provides field experience and teaches skills and conceptual approaches that are essential to successful efforts in conservation and environmentally sustainable development. The principal components of the training program include: core courses to provide breadth in conceptual approaches; program flexibility to allow students the opportunity to emphasize social-economic aspects or natural science aspects without sacrificing either; active involvement in a seminar series that stresses multi-disciplinary efforts and collaboration on projects; and opportunities for field experience in addressing environmental problems. We expect that graduates of this program will be competitive for mid-level management positions in public and private stewardship organizations such as the National Park Service or the Nature Conservancy. The master's degree option also provides a sound interdisciplinary base for pursuing a more specialized doctoral program.

A certificate in Conservation Ecology and Sustainable Development is also offered. Students enrolled in other graduate programs at the University of Georgia are eligible to apply. This option is designed to meet the needs of professionals in such fields as law, forestry, and engineering who may wish to develop an environmental specialization in their professional field. This option includes the coursework that is available in the master's degree program but does not require fieldwork or research.

The department's webpage is http://www.ecology.uga.edu and the e-mail address is ecoginfo@arches.uga.edu.

For a description of the MS and PhD interdisciplinary program in toxicology, see the section in this bulletin entitled, "General Degrees: Interdisciplinary Program."

ECOL 4000/6000. Population and Community Ecology. 3 hours.
Undergraduate prerequisite: ECOL(BIOL) 3500-3500L and MATH 2210.
The birth, death, and movement of organisms, with particular reference to population dynamics; the forces that structure communities of plants and animals.

ECOL 4010/6010. Ecosystem Ecology. 3 hours.
Undergraduate prerequisite: ECOL(BIOL) 3500-3500L and MATH 2210.
Ecosystem structure and function with emphasis on energetic and biogeochemical processes in natural and managed ecosystems, from local to global scales.

ECOL 4020/6020-4020L/6020L. Field Systems Ecology. 4 hours. 2 hours lecture and 6 hours lab per week.
Undergraduate prerequisite: ECOL(BIOL) 3500-3500L and MATH 2210 and MATH 2210L.
Ecology, field biology, and dynamic processes of terrestrial and aquatic ecosystems integrated by empirical monitoring and systems modeling within a campus watershed. Field trips to the Smoky Mountains and Georgia coast will extend the principles to a regional geographic scale.

ECOL 4030/6030-4030L/6030L. Mammalogy. 4 hours. 2 hours lecture and 6 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Taxonomy, distribution, ecology, and evolution of mammals.

ECOL 4040/6040-4040L/6040L. Herpetology. 4 hours. 2 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Evolution, ecology, behavior, structure, and physiology of amphibians and reptiles.

ECOL 4050/6050-4050L/6050L. Ichthyology. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Taxonomy, distribution, ecology, evolution, and conservation of the marine and freshwater fishes.

ECOL 4060/6060-4060L/6060L. Ornithology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Identification, classification, life histories, evolution, and behavior of birds, with an emphasis on Georgia species.

ECOL 4070/6070-4070L/6070L. Invertebrate Zoology. 4 hours. 3 hours lecture and 6 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Functional morphology, taxonomy, phylogeny, and general biology of invertebrates.

ECOL 4100/6100-4100L/6100L. Ecological Biocomplexity. 4 hours.
Prerequisite: Permission of department.
Theory of complex systems applied to ecology and estuarine ecosystems. Team projects will provide experience in field and laboratory methods, data acquisition and analysis, and simulation modeling and systems analysis. Software to be used includes Stella for building simulation models and Matlab for systems analysis methods.

ECOL 4110/6110. Insect Diversity. 4 hours. 1 hour lecture and 6 hours lab per week.
Undergraduate prerequisite: Permission of department.
The biodiversity of tropical and temperate insects, including theoretical issues, natural history, and methods for study.

ECOL(EETH) 4200/6200. Ecological Values. 4 hours.
Undergraduate prerequisite: Permission of department.
A general ecology course for non-science majors, which is a core course for the environmental ethics certificate. Based on lectures, readings, and laboratories. The course is designed to examine ecological phenomena from global patterns to individual interactions.

(ECOL)ANTH 4210/6210. Zooarchaeology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Animal remains recovered from archaeological sites, studied in light of zoological and archaeological methods and theories and interpreted in terms of human and animal behavior.

ECOL 4240/6240-4240L/6240L. Physiological Ecology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Physiological responses of organisms to environmental factors.

(ECOL)ANTH(BIOL)(BTNY)(ENTO) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: Permission of department.

Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

(ECOL)ANTH 4290/6290. Environmental Archaeology. 3 hours.
Survey of theories and methods used to study the relationship between humans and their environment. Emphasis is on subsistence strategies and environmental reconstructions based on archaeological evidence and the techniques of zooarchaeology, paleobotany, and paleonutrition.

ECOL(FORS) 4310/6310-4310L/6310L. Limnology. 4 hours. 3 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: ECOL(BIOL) 3500-3500L or FORS 3300.
Aquatic ecosystems (lakes and streams) and their biota. Linkages between terrestrial and aquatic ecosystems.

(ECOL)FORS 4360/6360. Fish Ecology. 4 hours.
Undergraduate prerequisite: ECOL(BIOL) 3500-3500L or FORS 3020-3020L.
Undergraduate prerequisite or corequisite: ECOL 4050/6050-4050L/6050L.
Lectures and discussions will be used to provide an interactive exploration of the ecology of fishes. Topics include: foraging, reproduction, habitat selection, niche, competition, and the mechanisms controlling fish biodiversity. Instruction includes both the status of a topic and appropriate research designs. The latter materials will be relevant to most animal taxa.

(ECOL)BTNY 4750/6750. Tropical Ecology and Conservation. 3 hours.
Prerequisite: BIOL 1107-1107L and BIOL 1108-1108L.
Patterns and processes in the origin, maintenance, and loss of the high biological diversity in the tropics, emphasizing particular communities and ecosystems, including tropical rainforest, tropical savannas, tropical islands, and coral reefs.

(ECOL)(ANTH)CRSS(GEOG)(HORT) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Undergraduate prerequisite: Permission of department.
Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

(ECOL)(ANTH)CRSS(GEOG)(HORT) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3-6 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in CRSS(HORT)(ANTH) 4940/6940.
Prerequisite: CRSS(HORT)(ANTH) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.

ECOL 6080. Principles of Conservation Ecology and Sustainable Development I. 4 hours. 3 hours lecture and 1 hour lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L or permission of department.
Ecological principles applied to conservation of habitats and biodiversity. Influence of human activity on population dynamics, genetics, and community structure.

ECOL(ANTH)(FORS) 6140. Principles of Conservation Ecology and Sustainable Development II. 3 hours.
Prerequisite: ECOL 6080.
Social science dimensions of conservation and sustainable development; social, economic, and political considerations in managing natural resources; policy-level aspects to project implementation.

ECOL 6400. Evolution of the Biosphere. 4 hours.
Prerequisite: ECOL(BIOL) 3500-3500L and CHEM 2211 and MATH 2210.
Fundamental concepts and emerging ideas pertaining to the origin and maintenance of life and biological diversity and the role of biological diversity in biogeochemical cycles and ecosystem function.

ECOL 7000. Master's Research. 1-15 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

ECOL 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

ECOL 8000. Topics in Modern Ecology. 3 hours.
Prerequisite: Permission of department.
Research topics in modern ecology presented by faculty of ecology, with emphasis on research grants and proposal writing.

ECOL(ANTH) 8110. Tropical Ecological and Cultural Systems. 2 hours.
Prerequisite: ECOL(FORS)(ANTH) 6140.
Characteristics of tropical ecosystems, tropical biological communities, and human cultures in the tropics; how they differ from those in the temperate zone, and the implications for conservation and development.

ECOL(BTNY) 8120-8120L. Plant Reproductive Ecology. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: Permission of department.
Pollination ecology, breeding systems, patterns of gene flow via pollen and seed dispersal, flower arrangement and phenology, and implications of reproductive biology for demography. Group and individual laboratory projects.

ECOL(BTNY)(ENTO) 8150. Wetland Ecology. 3 hours.
Prerequisite: Permission of department.
Principles of ecology, elemental cycling, hydrology, policy and management of marine and freshwater wetlands.

ECOL(BTNY)(ENTO) 8150L. Wetland Ecology Laboratory. 1 hour. 3 hours lab per week.
Prerequisite: ECOL(ENTO)(BTNY) 8150 or permission of department.
Techniques for the study of marine and freshwater wetlands. Optional weekend field trips will explore distant wetland sites.

ECOL 8170. Natural History of the Hymenoptera. 4 hours. 1 hour lecture and 6 hours lab per week.
Prerequisite: Permission of department.
Natural history of the Hymenoptera, including evolution, ecology, and systematics. Identification of taxa of Hymenoptera and methods used in their study.

ECOL 8220. Stream Ecology. 2 hours. Repeatable for maximum 8 hours credit. 2 hours lab per week.
Prerequisite: Permission of department.
Current topics and literature from the standpoints of objectives, experimental design, data analyses, results, assessment of results, and significance to general stream ecology.

ECOL 8230. Lake Ecology. 2 hours. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Current topics and literature in the ecology of lakes, ponds, reservoirs, and wetlands.

ECOL 8300. Behavioral Ecology. 3 hours.
Prerequisite: Permission of department.
Ecological variation, natural selection, and other evolutionary processes; sexual selection and sexual conflict, mating systems, sex allocation, the causes and consequences of sexual behavior, evolution of sex, parental care, cooperation, competition, and punishment.

ECOL(BTNY)(FORS) 8310. Population Ecology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L and permission of department.
Advanced ecological theory to biological populations. Mathematical and evolutionary treatment of population growth and regulation, niche theory, foraging theory, predator-prey theory, habitat selection, and competition.

ECOL 8400. Perspectives on Conservation Ecology and Sustainable Development. 1 hour.
Ecological issues of conservation and development.

(ECOL)BTNY(FORS) 8410. Community Ecology. 4 hours.
Prerequisite: ECOL 4010/6010-4010L/6010L and STAT 4220.
The applicability of advanced theory to multi-species communities. Patterns and processes that influence species composition, diversity, and function. Topics include deterministic vs. stochastic regulation, succession, resource partitioning, patch dynamics, island biogeography, and food webs.

ECOL 8420. Watershed Conservation. 3 hours.
Prerequisite: BIOL 1108-1108L and permission of department.
Environmental problems in freshwater systems over a variety of scales (local to global) from a conservation perspective. Systems examined include streams, rivers, lakes, wetlands, groundwater and coastal waters, with a strong focus on effective incorporation of ecological knowledge into resource management efforts.

ECOL 8440. Principles of Agroforestry/Agroecology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L or ECOL 4010/6010-4010L/6010L or permission of department.
Agricultural intercropping, mixed forestry plantation practices, and sustainable resource use.

ECOL 8500. Theoretical Ecology. 2 hours. Repeatable for maximum 8 hours credit. 2 hours lab per week.
Theoretical literature in population, community, and ecosystem ecology.

ECOL 8580-8580L. Theory of Systems Ecology. 4 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: Permission of department.
Theory of complex systems applied to ecology and ecosystems. Team projects will be conducted in ecological modeling and systems analysis.

ECOL 8600. Nuclear Tracers in Ecology. 3 hours. 2 hours lecture and 3 hours lab per week.
The use of stable and radioactive tracers in ecological research. Current use of nuclear tracers for carbon, nitrogen, phosphorus, and sulfur in soil, water, and terrestrial ecosystems.

(ECOL)EHSC 8610. Aquatic Toxicology. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L and [EHSC 4490/6490 or PHRM(VPHY) 6910 or PHRM(VPHY)(POUL)(EHSC) 8920].
Toxicological effects of aquatic pollution focusing on fate and transport of xenobiotics; xenobiotic accumulation, dynamics, and toxicity in aquatic organisms; the analysis and modeling of the effects of aquatic pollution on organisms; and the determination of related risks to aquatic ecosystems and human populations.

ECOL(EHSC) 8630-8630L. Quantitative Ecological Toxicology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L and (STAT 4220 or STAT 6220).
Principles and quantitative methods for the analysis of ecotoxicological data.

(ECOL)CRSS 8650. Nutrient Cycling Models. 3 hours.
Prerequisite: [CSCI 7010 and CRSS(MIBO) 4610/6610-4610L/6610L] or permission of department.
Structure, function, and performance of current nutrient cycling models used to simulate carbon, nitrogen, phosphorus, and sulfur transformations in the soil.

ECOL(CRSS) 8660-8660L. Soil Biology and Ecology. 4 hours. 2 hours lecture and 4 hours lab per week.
Not open to students with credit in ECOL(CRSS) 6650-6650L.
Prerequisite: ECOL(BIOL) 3500-3500L or CRSS 4590/6590-4590L/6590L or CRSS(MIBO) 4610/6610-4610L/6610L.
Organisms in the soil environment, with emphasis on macrobiota and their functional roles in food webs and ecosystem processes.

ECOL(AAEC) 8700. Environmental Policy and Management. 3 hours.
Evolution, form, and substance of United States federal policies and programs that address ecological problems, focusing on the nature of problems and alternatives for effective resolution.

ECOL 8710. Environmental Law Practicum. 4 hours. Repeatable for maximum 8 hours credit.
Ecology, law, and other graduate students work together to address pressing environmental concerns identified by community stakeholders. Skills used include problem identification, research and analysis, legislative drafting, and presentations.

ECOL 8720. Environmental Law for Scientists. 3 hours.
Common and statutory law (federal, state, and local) principlesintended to prevent and remedy pollution.

ECOL 8990. Problems in Ecology. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Analysis of contemporary themes in ecology.

ECOL 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

ECOL 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

The College of Family and Consumer Sciences

Sharon Y. Nickols, *Dean*
(Dawson Hall)

The College of Family and Consumer Sciences offers the MS and PhD degrees in each of its departments: Child and Family Development; Foods and Nutrition; Housing and Consumer Economics; and Textiles, Merchandising, and Interiors. The Department of Child and Family Development and the Department of Foods and Nutrition also offer the Master of Family and Consumer Sciences (MFCS) degree. A Pre-Professional Certificate in marriage and family therapy is also offered to graduate students meeting certain requirements. (Please see Index.) The Department of Child and Family Development offers an AAMFT accredited program. A certificate is also available in gerontology. (Please see Index.) Facilities include well equipped laboratories in foods, nutrition, and textiles; the Marriage and Family Therapy Clinic; the McPhaul Child and Family Development Center for infants and young children; and the computer laboratories located in Dawson Hall. Applications for admission and requests for assistantships should be addressed to the graduate coordinator in the department of interest.

Child and Family Development

David W. Wright, *Head*
Adam Davey, *Graduate Coordinator,* 542-4934
(Dawson Hall)

The MS and PhD programs are designed to: enable students to gain and demonstrate competencies in acquiring, integrating, and applying substantive and theoretical knowledge of both child development and family relationships; provide knowledge and skills for conducting research on individual and family development and behavior; and enable students with skills for engaging with individuals, families and other professionals in processes that prevent or solve problems and promote competence and well-being across the life span.

CHFD 4080/6080. Advanced Human Development. 3 hours.
Undergraduate prerequisite: CHFD 2950-2950L.
Theoretical perspectives and philosophical issues in human development across the life span from an interdisciplinary perspective. Special reference to techniques of child guidance.

CHFD 4090/6090. Advanced Infant Development. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CHFD 3900.
Emotional, social, cognitive, and physical development in infancy. Supervised observation in Infant Center and in selected homes.

CHFD 4130/6130. Family Policy. 3 hours.
Undergraduate prerequisite: CHFD 2100 and CHFD 2950-2950L.
Relevance of government and business policies to the lives of children and families. Assessment of the influence of policies using criteria drawn from the field of child and family development.

CHFD(HACE) 4500/6500. Aging and the Family. 3 hours.
Undergraduate prerequisite: Junior standing or permission of department.
Review of theory, research, and methodology on aging and the family. Emphasis rests with identifying current concepts and controversies, and diversity in the experiences of families and aging individuals.

CHFD 4600/6600. Social Ecological Perspectives on Adult Development and Aging. 3 hours.
Undergraduate prerequisite: CHFD(HACE) 4500/6500.
Reviews theory and research on development from mid-life through advanced old age. Focus is on the changing individual in a social context, including social development, social cognition, and aging.

CHFD(SOCI) 4610/6610. The Family. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Family study utilizing data from the fields of anthropology, individual and social psychology, history, sociology, economics, and psychiatry.

CHFD 4620/6620. Women in the Family and Society. 3 hours.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Women's experiences and gender issues in relation to family and individual development. Research and policy implications are examined.

CHFD 4700/6700. The Family and Adolescence. 3 hours.
Undergraduate prerequisite: CHFD 3700.
Advanced consideration of unique features of the family that includes an adolescent member. Special attention is given to dual processes of adolescent development and family development.

CHFD 4810/6810. Hospitalized Child and the Family. 3 hours.
Undergraduate prerequisite: CHFD 2100 and CHFD 2950-2950L and permission of department.
Developmental and psychosocial issues of hospitalized children and their families. Organization and services in health care settings investigated.

CHFD 4850/6850. Family Development. 3 hours.
Undergraduate prerequisite: CHFD 2100 or SOCI 1101.
Families as social groups that develop their own patterns, meanings, and processes across family life cycle in both conventional and alternative family forms.

CHFD 4860/6860. Parent Education and Child Guidance. 3 hours.
Undergraduate prerequisite: CHFD 2100 and CHFD 2950-2950L.
Application of theory, research, and developmental practice to understanding the role of parents, teachers, and community leaders in guiding the behavior of children from birth through adolescence, and to establishing mutually satisfying parent-child relationships through the life cycle. Programs for parents and parental interactions with schools and other social institutions.

CHFD 4870/6870. Human Sexuality Across the Life Span. 3 hours.
Undergraduate prerequisite: CHFD 2100.
Attitudes toward and values associated with human sexuality, based on substantive and theoretical information, with emphasis on how development and interactions across the life span are affected by familial, social, cultural, and psychological factors.

CHFD 4900/6900. Seminar in Child and Family Development. 1-3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: Permission of department.
Selected topics and problems in child and family development.

CHFD 5120/7120. Observation and Assessment Techniques. 3 hours.
Undergraduate prerequisite: CHFD 2950-2950L.
Directed experiences in observing, recording, and assessing behavior and interaction among children and families, and examination of program assessment.

CHFD 5130/7130. Creative Activities for Young Children. 3 hours.
Undergraduate prerequisite: CHFD 4860/6860.
Quality individual and group programming for young children based upon current theory, research, and developmentally appropriate practice. Special emphasis will be placed upon the integration of creative activities including art, music, movement, nutrition, health, dramatic play and computer applications.

CHFD 5140/7140. Group Programs for Young Children. 9 hours. 5 hours lecture and 16 hours lab per week.
Undergraduate prerequisite: CHFD 3900.
Developmental and educational theories applied to the design, content, and implementation of group programs for young children.

CHFD 5160L/7160L. Administration of Children's Programs. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CHFD 4860/6860 and CHFD 5140/7140.
Theories and administration of child care programs. Topics include planning, scheduling, enrollment, certification, and evaluation. Laboratory work required.

CHFD 5710/7710. Study Tour in Child and Family Development. 3 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: Permission of department.
Selected topics in child and family development. Combined with site visits to relevant locations.

CHFD 5900/7900. Preinternship Orientation. 1-3 hours. Repeatable for maximum 3 hours credit.
Undergraduate prerequisite: Junior or senior standing or permission of department.
Orientation to and preparation for doing an internship.

CHFD 5910/7910. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: Permission of department.
Supervised professional practice in settings with employed persons with a degree in Child and Family Development or related field.

CHFD 5920/7920. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: Permission of department.
Supervised professional practice in programs for children under six with employed persons with a degree in Child and Family Development or related field.

CHFD 5930/7930. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: Permission of department.
Supervised professional practice in human development programs with employed persons with a degree in Child and Family Development or related field.

CHFD 5940/7940. Internship in Child and Family Development. 1-12 hours.
Undergraduate prerequisite: Permission of department.
Supervised professional practice in special needs programs with employed persons with a degree in Child and Family Development or related field.

CHFD 5950/7950. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: Permission of department.
Supervised professional practice in administrative programs with employed persons with a degree in Child and Family Development or related field.

CHFD 5960/7960. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: CHFD 5900/7900 and permission of department.
Supervised professional practice in Child Life programs with employed persons with a degree in Child and Family Development or related field.

(CHFD)ECHD(SOWK) 6010. Issues in Marriage and Family Therapy. 3 hours.
Prerequisite: Permission of school.
Disciplines and professional groups related to marriage and family therapy, including historical, ethical, and legal issues, and other topics relevant to the current practice of marriage and family therapy.

CHFD 6100. Theories of Human Development. 3 hours.
Prerequisite: Permission of department.
Prerequisite or corequisite: CHFD 6110.
Theoretical and historical perspectives used in the study of human development across the lifespan.

CHFD 6110. Issues in Human Development. 3 hours.
Prerequisite: Permission of department.
Prerequisite or corequisite: CHFD 6100.
Integration of classic and current research literature on human development across the life span.

CHFD 6630. Theories of Family Relationships. 3 hours.
Prerequisite: Permission of department.
Theoretical and philosophical perspectives used in the study of families.

CHFD 6640. Issues in Family Relationships. 3 hours.
Not open to students with credit in CHFD(SOCI) 4610/6610.
Prerequisite: Permission of department.
Integration of classic and current research literature on families from an ecological, life-span perspective.

CHFD 6800. Research Methods. 3 hours.
Prerequisite: Permission of department.
Research design in selected areas of family and consumer sciences. Emphasis on common problems incurred in measurement and data analysis.

CHFD 7000. Master's Research. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

CHFD 7010. Directed Study in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Directed reading and/or research under supervision of the instructor.

CHFD 7210. Problems in Child and Family Development. 3 hours.
Prerequisite: Permission of department.
Individual guidance in the development of a significant project related to the student's field of work. Written report of problem or project required.

CHFD 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.

Thesis writing under the direction of the major professor.

CHFD 7970. Interdisciplinary Collaboration in the Context of Disability. 3 hours.
Prerequisite: Permission of department.
The support of individuals with disabilities and their families through team-oriented collaboration. Team models, organizational aspects of teams, individual roles and attitudes, interpersonal factors, individual and group diversity, and leadership are addressed in relation to successful collaboration.

CHFD 7980. Foundations of Early Intervention with Children Birth to Age Three. 3 hours.
Prerequisite: Permission of department.
Historical and theoretical perspectives on intervention with children and disabilities from birth to age three. Addresses the impact of disability risk factors on children in relation to typical development norms and stresses challenges to culturally-sensitive intervention strategies, assessment, parent/program consultation, and interagency coordination.

CHFD 7990. Working with Families in Early Intervention. 3 hours.
Prerequisite: Permission of department.
Seminar on values, policies, and strategies that promote successful intervention with families of children with disabilities. Family diversity, family assessment, parent-professional partnerships, family service coordination, and family-focused interagency interaction are addressed in relation to family roles, structure, and process.

CHFD 8050. Family Systems Theory. 3 hours.
Prerequisite: Permission of department.
Experience in marriage and family therapy through observation of healthy marital/family systems. Structured experiences to develop skills in interviewing, assessing couple/family functioning, making limited therapeutic interventions, observing couple/family interaction, and developing basic aspects of the client-therapist relationship.

CHFD 8060. Principles of Marital and Family Therapy I. 3 hours.
Prerequisite: Permission of department.
Principles, theoretical approaches, specific objectives, and techniques currently used in marriage and family therapy. The focus will be on normal developmental problems rather than on psychopathology.

CHFD 8070. Principles of Marital and Family Therapy II. 3 hours.
Prerequisite: Permission of department.
Additional principles, theoretical approaches, specific objectives, and techniques currently used in marriage and family therapy. The focus will be on normal developmental problems rather than on psychopathology.

CHFD 8080. Marriage and Family Assessment. 3 hours.
Prerequisite: CHFD 8700.
Observational and self-report measures used to assess aspects of marriage and family life with emphasis on reliability, validity, and theoretical issues. Application in educational and clinical settings emphasized.

CHFD 8090. Research Methods in Marriage and Family Intervention. 3 hours.
Prerequisite: Permission of department.
Quantitative and qualitative research designs used to study the process and outcome of marriage and family interventions.

(CHFD)EFND 8120. History of Childhood and the Family in the United States. 3 hours.
An examination of the changing experiences and forms of childhood and family life, as mediated by class and ethnicity,over the course of United States history. Students will seek to relate those changing experiences and forms to their political, economic, and schooling contexts, and to consider explanations for their historical alterations.

CHFD 8700. Philosophy of Science in Child and Family Development. 3 hours.
Prerequisite: Permission of department.
Integration of literature on history and philosophy of science as it pertains to the study of human development and families across the life span.

CHFD 8710. Principles of Life-Span Human Development. 3 hours.
Prerequisite: CHFD 8700.
Integration of theoretical and research literature as it pertains to study of human development over the life span with an emphasis on contextual-systemic approaches to family and individual development.

CHFD 8720. Ecological Perspective on Individual and Family Diversity. 3 hours.
Prerequisite: CHFD 8700.
Theoretical, historical, and philosophical perspectives on diversity and similarity in individual and family development. Considers transactions among families and individuals and other significant contexts as moderated by diversity. Emphasizes implications for service delivery, treatment, policy, and marriage and family therapy.

CHFD 8800. Quantitative Methods in Child and Family Development. 4 hours.
Prerequisite: Permission of department.

Quantitative research processes, conceptualization of research problems, research designs, selection of appropriate methods of data collection, consideration of alternative data analysis strategies, interpretation of findings, and research writing. Research on marital and family therapy included.

CHFD 8810. Qualitative Methods in Child and Family Development. 4 hours.
Prerequisite: Permission of department.
Qualitative research processes, conceptualization of research problems, research design, selection of appropriate methods of data collection, consideration of alternative data analysis strategies, interpretation of findings, and research writing. Research in marital and family therapy included.

CHFD 8820. Evaluation Methods in Child and Family Development. 3 hours.
Prerequisite: Permission of department.
Evaluation research processes; prevention/intervention settings; research problems; research designs; selection of appropriate methods of data collection; alternative data analysis strategies, including measurement of change; interpretation of findings; and research/evaluation report writing. Research in marital and family therapy included.

CHFD 8910. Current Research and Issues in Child and Family Development. 1-2 hours. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Current research of faculty, graduate students, and visiting scholars. Discussion of current issues pertaining to child and family development.

CHFD(PSYC) 8920. Behavior Problems in Children. 3 hours.
Prerequisite: Permission of department.
The child's adjustment to his or her environment with a consideration of the causes, treatment, and prevention of behavior problems. Utilization of case materials and research problems in the field will be carried out by the student.

CHFD 8950. Seminar in Child and Family Development. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Current literature on selected areas in child and family development; discussion of current research trends; reports and discussion on selected topics; completion of review of empirical research paper.

CHFD 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

CHFD 9010. Directed Study in Family and Child Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Independent study and/or research under supervision of an instructor.

CHFD 9070. Practicum in Marriage and Family Therapy. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Supervised experience in marriage and family therapy.

CHFD 9080. Supervision of Marriage and Family Therapy. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
Methods of supervision in marriage and family therapy.

CHFD 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

CHFD 9900. Preinternship Orientation. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Orientation and preparation for doing a doctoral level internship.

CHFD 9910. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Supervised professional practice in off-campus settings with employed persons with a degree in Child and Family Development or related field.

CHFD 9920. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Supervised professional practice in on-campus settings with employed persons with a degree in Child and Family Development or related field.

Institute on Human Development and Disability

IHDD 6000. Critical Issues in Disability Studies. 3 hours.
Contemporary issues impacting people with disabilities and their families. Self-determination, disability rights, inclusion, person-centered approaches, cultural competence, legislative/legal issues, and personal issues of people with disabilities will be addressed. The course presents a lifespan perspective.

Foods and Nutrition

Rebecca M. Mullis, *Head*
Mary Ann Johnson, *Graduate Coordinator,*
542-2292
(Dawson Hall)

The objectives of the MS and PhD programs are to prepare students to function as nutrition professionals, to meet changing needs of society and industry, and to generate scholarly work in the areas of foods and nutrition. Graduates are placed in research positions with universities, medical schools, federal laboratories, and industry. The primary emphasis of the program is the scientific basis for diversity in the human needs for foods and nutrients, the metabolic responses to dietary change, and the interactions among genetics, nutrients and food consumption patterns on human health and well-being. The Preprofessional Practice Program (AP4) equips students with the skills needed to become a Registered Dietitian. The Preprofessional Program in Dietetics (AP-4 Program) is currently granted approval status by the Commission on Accreditation/Approval for Dietetics Education of The American Dietetic Association, 216 W. Jackson Blvd., Chicago, IL 60606-6995, (312) 899-4876.

FDNS 4050/6050. Optimal Nutrition for the Life Span. 3 hours.
Not open to students with credit in FDNS 4510/6510.
Undergraduate prerequisite: FDNS 2100.
Nutritional needs of infants, young children, adolescents, pregnant and lactating women, and middle-aged and elderly people.

FDNS 4100/6100. Micronutrient Nutrition. 4 hours.
Undergraduate prerequisite: FDNS 3100 and BCMB (BIOL)(CHEM) 3100 and (CBIO 2210-2210L or VPHY 3100).
Human needs for vitamins, minerals, and electrolytes with emphasis on biochemistry, physiology, epidemiology, food sources, and their role in performance under varying conditions of age and health.

FDNS 4510/6510. Nutrition Related to the Human Life Cycle. 3 hours.
Undergraduate prerequisite: FDNS 3100.
Nutritional health needs related to specific stages of the human life cycle. Special emphasis will be given to physiological changes and nutrition needs during pregnancy, lactation, infancy, childhood, adolescence, and adulthood.

FDNS 4520/6520. Dietetic Practice and Nutrition Support. 2 hours.
Undergraduate corequisite: FDNS 4530/6530.
Specialized nutrition practice in the clinical setting including nutrition assessment, enteral and parenteral nutrition, and nutrition care documentation.

FDNS 4530/6530. Medical Nutrition Therapy. 4 hours.
Undergraduate prerequisite: FDNS 4100/6100.
Diet modifications for disease prevention and treatment. Special emphasis is given to the study of gastrointestinal disease and metabolic, cardiovascular, and renal disorders.

FDNS 4540/6540. Public Health Dietetics. 3 hours.
Undergraduate prerequisite: FDNS 4050/6050 or FDNS 4510/6510.
Nutrition in public health care and tools for successful management and delivery of nutrition services, including knowledge of community assessment, planning, implementation, and evaluation as related to nutritional care.

FDNS 4550/6550. Nutritional Biodynamics. 3 hours.
2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: FDNS 3100.
Nutrients as precursors for organ and cell components and energy stores, emphasizing processes of turnover, growth, biosynthesis, and metabolism. Students will explore quantitative and dynamic issues using interactive computer modeling.

FDNS 4560/6560. Nutrition and Aging. 3 hours.
Undergraduate prerequisite: (FDNS 3100 or FDNS 4050/6050) and (CBIO 2210-2210L or VPHY 3100).
Foods and nutrients in the health and well-being of the elderly: effects of aging on macro and micronutrient needs; influence of disease, medications, economics, and culture; nutritional assessment, support, and ser-

vices; health promotion and disease prevention; future directions for research.

FDNS 4600/6600. Food and the Consumer. 3 hours.
Undergraduate prerequisite: FDNS 3600-3600L.
Health, safety, and policy issues related to food consumption trends; nutrient composition of foods, food additives, food allergies and hypersensitivities, naturally occurring toxins, pathogens, pesticides, biotechnology-derived foods, irradiated foods, and food laws and regulations.

FDNS 4610/6610. Foodservice Procurement and Financial Management. 2 hours.
Undergraduate prerequisite: FDNS 3610-3610L.
Purchasing methods, specifications, storage and issuing procedures, inventory systems. Cost control, budgets, and financial statements used in foodservice organizations.

FDNS 4620/6620. Management of Foodservice Organizations. 3 hours.
Undergraduate prerequisite: FDNS 4610/6610.
Management, staffing, and delivery systems as they pertain to the resources and organization of public and private foodservice institutions.

FDNS 4630/6630. Cultural Aspects of Foods and Nutrition. 3 hours.
Undergraduate prerequisite: FDNS 2100.
Foodways, food habits, and food-related behavior of various population groups and their influences on the nutritional status of group members.

FDNS 4640/6640. Food Sanitation and Safety. 3 hours.
Undergraduate prerequisite: FDNS 3600-3600L.
Safe food handling for foodservice and the consumer, with emphasis on causes and prevention of foodborne illness.

FDNS 4650/6650. Experimental Study of Food. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: [FDNS 2100 and FDNS 3600-3600L and (STAT 2000 or STAT 2210)] or permission of department.
Undergraduate prerequisite or corequisite: (CHEM 2100 and CHEM 2100L) or (CHEM 2211 and CHEM 2211L).
Functional and nutritional properties of components in food products; techniques to evaluate food products for consumer acceptability including individual and group laboratory experimentation; computer applications.

FDNS 4660/6660. Delivery Systems for Food and Nutrition Information. 3 hours.
Undergraduate prerequisite: FDNS 2100 and FDNS 3600-3600L and one course in Speech.
Transfer of food and nutrition information to consumers using various media.

FDNS 4710/6710-4710L/6710L. Catering. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: FDNS 3610-3610L or permission of department.
Types of catering; establishing catering businesses; principles and practice of menu planning, work planning, food preparation, styles of service, cost accounting, and resource management.

FDNS 4720/6720. Menu Management and Service. 3 hours.
Undergraduate prerequisite: FDNS 3610-3610L or permission of department.
Meal planning and service styles for individuals, families, and institutions; cultural, nutritional, marketing, and social aspects of foods; government regulations related to meal planning.

FDNS 4730/6730. Food Sales and Service. 3 hours.
Undergraduate prerequisite: FDNS 3610-3610L or permission of department.
Effective sales and service techniques; market research and strategies specific to the foodservice industry.

FDNS 4740/6740. Food Service Facilities Planning and Development. 3 hours.
Undergraduate prerequisite: FDNS 3610-3610L or permission of department.
Concepts, strategies, and skills needed in planning, designing, and equipping food service facilities.

FDNS 4750/6750. Foodservice Cost Controls and Systems. 3 hours.
Undergraduate prerequisite: FDNS 4620/6620 or permission of department.
Cost control and accounting principles for the foodservice industry; manual and computer information systems for foodservice inventory and cost control.

FDNS 5910/7910. Foods and Nutrition Internship. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: FDNS 2100 and FDNS 3600-3600L and permission of department.
Supervised experience in dietetics, foodservice management, or a foods and nutrition related industry.

FDNS 6400. Advanced Macronutrients. 4 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 and VPHY 3100.
Literature of human nutrition related to macronutrients; includes metabolism, genetics, physiology, biochemistry, endocrinology, and epidemiology.

FDNS 6580. Graduate Special Topics in Foods and Nutrition. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: FDNS 4100/6100 or FDNS 6400 or permission of department.
Selected topics from the field of foods and nutrition.

FDNS 6670. Nutrition Intervention. 3 hours.
Prerequisite or corequisite: FDNS 4510/6510 or FDNS 4100/6100.
Critical examination of multiple nutrition intervention strategies used in clinical and community settings. Emphasis is placed on systematic analysis of nutrition-related health problems and interventions designed to address them. A major focus will be on developing a comprehensive nutrition intervention program for a selected target group.

FDNS 7000. Master's Research. 1-12 hours. Repeatable for maximum 35 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

FDNS 7010. Directed Research in Foods and Nutrition. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Individual guidance in the development of a research project. A written report of the problem or project will be required.

FDNS 7210. Problems in Foods and Nutrition. 3 hours.
Prerequisite: Permission of department.
Individual guidance in the development of a significant project related to the student's field of work. Written report of problem or project required.

FDNS 7300. Master's Thesis. 1-12 hours. Repeatable for maximum 35 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

FDNS 7930. Consumer Foods Internship. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Work in a public or private institution to obtain practical professional experience.

FDNS 8510. Metabolic Controls in Nutrition. 3 hours.
Prerequisite: [FDNS 6400 and BCMB 4020/6020] or permission of department.
Regulatory mechanisms of nutrition and metabolism, including current genetic theories on metabolic controls and their dysfunction in human health.

FDNS 8520. Nutritional Aspects of Growth and Development. 3 hours.
Prerequisite: [FDNS 4100/6100 and FDNS 6400 and BCMB 4020/6020] or permission of department.
Tissue and cellular development during prenatal and neonatal periods of growth, including current concepts of nutritional and hormonal regulation of cellular proliferation and differentiation.

FDNS 8530. Nutrition and Disease Processes I. 3 hours.
Prerequisite or corequisite: FDNS 4100/6100 or FDNS 6400 or permission of department.
Epidemiological, clinical, animal, and cellular studies linking diet and diseases including cancer and heart disease. Biochemical and physiological mechanisms by which nutrients prevent disease.

FDNS 8540. Mineral Nutrition and Human Health. 3 hours.
Prerequisite: FDNS 4100/6100 and FDNS 6400.
Literature on human mineral nutrition, including molecular biology, physiology, and epidemiology, with special emphasis on the role of minerals in optimal health.

FDNS 8550. Nutrition and Disease Processes II. 3 hours.
Prerequisite or corequisite: FDNS 4100/6100 or FDNS 6400 or permission of department.
Epidemiological, clinical, animal, and cellular studies linking diet and age-related diseases such as diabetes, osteoporosis, other musculoskeletal disorders, and sensory dysfunction. Biochemical and physiological mechanisms by which nutrients prevent disease.

FDNS 8560. Dissertation/Thesis Proposal Writing. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Proposal preparation and presentation for planning thesis/dissertation research.

FDNS 8580. Special Topics in Foods and Nutrition. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: (FDNS 6400 and BCMB 4010/6010) or permission of department.
Recent developments in the field of foods and nutrition.

FDNS 8900. Seminar in Foods and Nutrition. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Literature on selected topics in foods and nutrition.

FDNS 9000. Doctoral Research. 1-12 hours. Repeatable for maximum 35 hours credit.
Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

FDNS 9010. Directed Research in Foods and Nutrition. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Independent study and/or research under supervision of a faculty member. No more than six hours may be counted toward master's degree requirements.

FDNS 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 35 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Housing and Consumer Economics

Brenda Cude, *Head*
Teresa Mauldin, *Graduate Coordinator,*
542-4854
(Dawson Hall)

The MS program offers flexibility in selecting coursework to meet a variety of career goals in either housing or consumer economics. The PhD program provides students with the opportunity to pursue scholarly activities by providing a thorough acquaintance with consumer economics or housing policy, quantitative methods in applied economics, research methods and statistics. Students take core courses in the department and supporting coursework in statistics and related area(s) outside the department.

HACE 4100/6100. Family Economic Behavior and Policy. 3 hours.
Undergraduate prerequisite: HACE 3150.
The family as an income producing and time allocating unit. Theory and application of the economics of household decision making. The family as the supplier and demander of economic inputs and outputs. The interrelationship between demographic and economic family characteristics and well-being.

HACE 4200/6200. Family Savings and Investments. 3 hours.
Graduate prerequisite: Permission of department.
Management of family financial resources; emphasis on savings and investment planning. Study of the securities market, investment risk and return, features of fixed and variableinvestments including stocks, bonds, mutual funds, real estate,and other speculative investments and security valuation,performance measurement, and analysis.

HACE 4210/6210. Family Retirement Planning and Employee Benefits. 3 hours.
Undergraduate prerequisite: HACE 3200.
Evaluation of retirement plans and employee benefits in the context of prescriptive financial planning decisions. Discussion of a more advanced concept of time value of money, risk tolerance, life expectancy, social security, retirement plans, tax implications of retirement plans, and health insurance.

HACE 4220/6220. Family Estate Planning. 3 hours.
Undergraduate prerequisite: HACE 3200.
Principles and practices of family estate planning for the professional financial planner. Methods of property transferat death, estate planning documents, family and charitablegifting strategies and gift taxation, incapacity planning, andcalculation, deferral, and minimization of estate and gift taxes.

HACE 4300/6300. Advanced Housing Theories. 3 hours.
Undergraduate prerequisite: HACE 3300.
Sociological and economic theories of housing consumption and production in housing markets, including basic concepts of housing needs, quality, norms and satisfaction. Economic theories relating to characteristics of housing and capital markets, including primary and secondary mortgage markets and alternative financing.

HACE 4310/6310. Housing Policy. 3 hours.
Undergraduate prerequisite: HACE 3300.
Housing policies at the federal, state, and local levels as they relate to current housing markets. Barriers and incentives for housing development activities created by regulations, finance, and taxation. The role of public/private initiatives in the provision of housing.

HACE 4350/6350. Household Technology and Systems. 3 hours. 2 hours lecture and 2 hours lab per week.
Technological devices and their use within the household, including mechanical and electrical systems, home automation, universal design, regulation, and national appliance standards.

HACE 4400/6400. Family Demographics and Policy. 3 hours.
Undergraduate prerequisite: HACE 2100 or SOCI 1101.

Basic concepts and measurement issues of family demography, including migration, income, marriage, and divorce; implications of family structural characteristics for public policies.

(HACE)CHFD 4500/6500. Aging and the Family. 3 hours.
Undergraduate prerequisite: Junior standing or permission of department.
Review of theory, research, and methodology on aging and the family. Emphasis rests with identifying current concepts and controversies, and diversity in the experiences of families and aging individuals.

HACE 4900/6900. Seminar in Housing and Consumer Economics. 1-3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: Permission of department.
Selected topics and problems in housing and consumer economics.

HACE 5100/7100. Consumer Protection. 3 hours.
Undergraduate prerequisite: HACE 3100 and HACE 3150.
Consumer rights and responsibilities in the private and public sector of the economy. Relationship of government, nonprofit, and corporate response to consumer problems; legislation concerning consumer information, product safety, and choice of goods and channels of appeal for the consumer.

HACE 5150/7150. Consumers' Market Environment. 3 hours.
Undergraduate prerequisite: HACE 3100 and HACE 3150.
The consumer marketplace in terms of the welfare of the consumer. Actions of consumers with changing marketplace, institutions, and government policies.

HACE 5200/7200. Family Financial Counseling. 3 hours.
Undergraduate prerequisite: HACE 3200.
Indicators, causes, and impact of family financial problems on the family's well-being. Topics covered include credit difficulties, repossessions, liens, garnishments, and bankruptcy.

HACE 5250/7250. Family Financial Planning. 3 hours.
Undergraduate prerequisite: HACE 4200/6200.
Advanced financial topics and development of a comprehensive financial plan. Regulation, certification, and legal and ethical requirements for financial planners.

HACE 5350/7350. Housing Counseling. 3 hours.
Undergraduate prerequisite: HACE 3300.
Basic information for certification as a Professional Housing Counselor. Includes basic techniques for housing, budget, and tenancy counseling.

HACE 5710/7710. Study Tour in Housing and Consumer Economics. 3 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: Permission of department.
Topics relating to housing and/or consumer economics, with site visits to relevant locations. Combines in-depth study with first-hand experience gained on site.

HACE 5900/7900. Professional Seminar and Internship Orientation. 1 hour.
Orientation to an internship experience.

HACE 5910/7910. Housing and Consumer Economics Internship. 3-9 hours. Repeatable for maximum 15 hours credit.
Undergraduate prerequisite: HACE 5900/7900.
Supervised work experience in housing, consumer economics, or consumer journalism.

HACE 6810. Housing the Elderly. 3 hours.
Housing needs and conditions, housing alternatives, legislation and current programs related to housing elderly persons. Survey of current housing is compared to proposals for effectively meeting more of the housing needs of the elderly person.

HACE 7000. Master's Research. 3-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

HACE 7010. Directed Study in Housing and Consumer Economics. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Directed study on masters research in housing and consumer economics.

HACE 7300. Master's Thesis. 3-18 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

HACE 8000. Research Methods in Housing and Consumer Economics I. 3 hours.
Research design. Emphasis on common problems incurred in measurement and data analysis in housing and consumer economics.

HACE 8050. Research Methods in Housing and Consumer Economics II. 3 hours.
Prerequisite: HACE 8000 and permission of department.
Advanced research methods. Integration of research design, measurement, and data analysis. Preparing a research proposal on topics in housing and consumer economics.

HACE 8100. Theory of Households and Markets I. 3 hours.
Contemporary theories of consumer and household decision making. Includes neoclassical economic analysis, the household production model, information costs, and related material.

HACE 8150. Theory of Households and Markets II. 3 hours.
Prerequisite: HACE 8100.
A continuation of Theory of Households and Markets I. Emphasis on application, extension, and integration.

HACE 8200. Family Financial Analysis. 3 hours.
Prerequisite: HACE 8150 or permission of department.
Family financial decision making over the life cycle. Advanced techniques in present and future value analysis. Economics of saving and borrowing, insurance and risk management, and retirement and estate planning. Effects of public policy on household financial decisions, and the interrelationship between family finance and the labor market.

HACE 8300. Housing Theories, Research, and Policies. 3 hours.
Theoretical and empirical housing models and concepts. Building on previous research, the student will develop and test his/her own conceptual model.

HACE 8400. Demographics and Policy. 3 hours.
Prerequisite: Permission of department.
Application of demographic data in the development of public policy. Includes changes in family status, aging, rural to urban migration, and economic development.

HACE 8900. Seminar in Housing and Consumer Economics. 1-12 hours. Repeatable for maximum 12 hours credit.
Selected topics in housing and consumer economics.

HACE 9000. Doctoral Research. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

HACE 9010. Directed Study in Housing and Consumer Economics. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Directed study in housing and consumer economics.

HACE 9100. Consumer Policies and Programs. 3 hours.
Prerequisite: HACE 8150.
Public policies and programs relating to consumers in the market. Policies promoting consumer information and protection as well as service-provision programs are explored in terms of benefit/cost relationships.

HACE 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Textiles, Merchandising, and Interiors

Ian R. Hardin, *Head*
J. Nolan Etters, *Graduate Coordinator,*
542-4892
(Dawson Hall)

Graduate programs are directed toward preparation of professionals for careers in industry, government, business and academia. Two degrees are offered: the MS degree in textiles, merchandising and interiors; and the PhD degree in textile sciences. Both are research degrees that culminate in a thesis (MS) or dissertation (PhD). Focus areas for the MS degree are dyeing and finishing, polymers and fibers, testing and analysis, environmental, merchandising, historic, and international trade. Major emphasis areas for the PhD degree are textile chemical processes, textile analysis, and textile products and standards.

TXMI 4100/6100. Advanced Textiles. 3 hours.
Undergraduate prerequisite: (TXMI 3500 and TXMI 3500L) or permission of department.
Fibers and finishes; emphasis on man-made fibers, new fiber, and finish developments and technology.

TXMI 4110/6110. Textile Dyeing. 3 hours.
Undergraduate prerequisite: TXMI 3500 and TXMI 3500L and permission of department.
Textile dyeing processes with emphasis on fiber-dye association. Analysis of dyeing techniques and properties of dyes and dyed materials.

TXMI 4120/6120. Product Standards and Quality Analysis. 3 hours.
Undergraduate prerequisite: (STAT 2000 and TXMI 3520) or permission of department.
Developing, maintaining, and assessing product standards from the initial design process to end uses of textile and apparel products. Quality assurance and certification programs; governmental regulations; statistical analysis and control of benefits offered through standards.

TXMI 4130/6130. Chemical and Instrumental Analysis of Polymers and Textiles. 3 hours.
Undergraduate prerequisite: TXMI 3520 and TXMI 4100/6100 and CHEM 2211 and CHEM 2211L.
Theory and application of instrumental analysis to polymers, fibers, fabrics, dyes, and finishes.

TXMI 4140/6140. Textile Finishing Processes. 3 hours.
Undergraduate prerequisite: TXMI 3520.
Theory, application, evaluation, and identification of textile finishes and textile auxiliary processes. Examination of the role of finishing and types of finishes used in manufacturing fibers, yarns, and fabrics.

TXMI 4150/6150. Nonwovens Science and Technology. 3 hours.
Undergraduate prerequisite: TXMI 3500 and TXMI 3500L.
Manufacture and conversion of nonwoven webs with examination of interrelationships involving raw materials, bonding systems, manufacturing processes, product properties, and end uses.

TXMI 4230/6230. Clothing and Human Behavior. 3 hours.
Undergraduate prerequisite: PSYC 1101 or SOCI 1101.
The study of clothing with particular emphasis on psychological, sociological, and economic aspects of clothing.

TXMI(DRAM) 4270/6270. History of Costume: Antiquity to Nineteenth Century. 3 hours.
Undergraduate prerequisite: Permission of department.
Interrelationships of costume and social, cultural, political, and economic environments from antiquity to the nineteenth century.

TXMI 4290/6290. History of Costume from the Nineteenth Century to Present. 3 hours.
Undergraduate prerequisite: (TXMI 3500 and TXMI 3500L) or permission of department.
Interrelationship of costume and social, cultural, political, and economic environments from the nineteenth century to present day.

TXMI 4330/6330. American Interiors and Furnishings. 3 hours.
American interior design and furnishings from the seventeenth to the twentieth centuries. Identification of styles as well as social, cultural, and historic influences.

TXMI 4340/6340. Historic Interior Materials. 3 hours.
Undergraduate prerequisite: Permission of department.
Ceiling, wall, and floor coverings, window treatments, upholstery, and lighting in historic American interior design, with emphasis on analysis and selection.

TXMI 4350/6350. Historical Homes and Furnishings. 3 hours.
Undergraduate prerequisite: [TXMI 3350 and ARST 2000]or permission of department.
The architecture, interiors, and furnishings in the western world from the ancient Egyptian era through 1850.

TXMI 4360/6360. Decorative Accessories for the Home. 3 hours.
Undergraduate prerequisite: TXMI 4350/6350 or permission of department.
Historical and cultural development of accessories used in the home including ceramics, metals, and textiles. Design and characteristics of materials in these accessories will be covered.

TXMI 4370/6370. Contemporary Homes and Furnishings. 3 hours.
Undergraduate prerequisite: TXMI 4350/6350 or permission of department.
Contemporary developments in architecture, interiors, and furniture from 1850 to the present day.

TXMI 4380/6380. Interior Fabrics and Materials: Specifications and Estimations. 3 hours.
Undergraduate prerequisite: (TXMI 3380 and TXMI 3520) or permission of department.
Construction, fibers, and finishes for fabrics with emphasis on quality, durability, and utilization of current materials for soft floor coverings, window treatments, and upholstery. Estimations and specifications.

TXMI 4520/6520. Apparel and Textile Economics. 3 hours.
Undergraduate prerequisite: [TXMI 3500 and TXMI

3500L and (ECON 2106 or ECON 2105)] or permission of department.
Organization and functions of apparel and textile industries. Factors related to production, distribution, and consumption of apparel and household textiles.

TXMI 4530/6530. International Textiles and Apparel: Europe. 3 hours.
Undergraduate prerequisite: TXMI 3500 and TXMI 3500L.
Textile and apparel production and distribution in relation to the culture, politics, and policies of major textile and apparel industries in Europe. Emphasis placed on impact of global issues on marketability and availability of textile and apparel products.

TXMI 4540/6540. International Textiles and Apparel: Asia. 3 hours.
Undergraduate prerequisite: TXMI 3500 and TXMI 3500L.
Textile and apparel production and distribution in relation to the culture, politics, and policies of major textile and apparel industries in Asia. Emphasis placed on impact of global issues on marketability and availability of textile and apparel products.

TXMI 4580/6580. History of Textiles in Europe and America. 3 hours.
Undergraduate prerequisite: Permission of department.
Textiles and the textile industry in prehistoric, ancient, medieval, and modern eras, with special emphasis on Western European and American textiles.

TXMI 5240/7240. Retailing Apparel and Textiles. 3 hours.
Retailing, retail organizational structures, merchandising, and organization of market resources in apparel and textiles. Emphasizes concepts applicable to the apparel and textile industry.

TXMI 5310/7310. Residential Interiors and Economic Resources. 3 hours.
Undergraduate prerequisite: TXMI 3380 or permission of department.
Residential space planning and selection of fabrics, finishes, and furnishings using specified amounts of economic resources.

TXMI 5320/7320. Residential Design Practices. 3 hours.
Undergraduate prerequisite: TXMI 4380/6380 and TXMI 5310/7310.
Relationships between the designer, wholesaler, and retailer in the home furnishing industry. Designer and client relationships with emphasis on retailing practices and economic resources in the residential design firm.

TXMI 5710/7710. Study Tour in Textiles, Merchandising and Interiors. 1-3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: Permission of department.
An on-location study of clothing, textiles, fashion merchandising, and residential interiors and furnishings. Includes lectures by recognized leaders in the fields; meetings with designers, manufacturers, merchants and field trips to designers' showrooms or studios, manufacturing plants, distribution centers, retail stores, and museums.

TXMI 5910/7910. Textiles, Merchandising and Interiors Internship. 3-9 hours. Repeatable for maximum 12 hours credit.
Undergraduate prerequisite: Permission of department.
Supervised work experience in textiles, clothing, interiors, and furnishings in a business firm off campus.

TXMI 6250. Apparel Theories and Methodologies. 3 hours.
Prerequisite: TXMI 4230/6230 and permission of department.
Theories and methods in apparel research: retailing, fashion, cultural, and historical.

TXMI 6260. Apparel Trade and International Retailing. 3 hours.
Economic aspects of apparel and textile trade and international retailing practices. Trade policies, comparative advantages, and global issues that affect apparel and textile trade and retailing are examined.

TXMI 7000. Master's Research. 1-12 hours. Repeatable for maximum 33 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

TXMI 7300. Master's Thesis. 1-12 hours. Repeatable for maximum 33 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

TXMI 8050. Textiles, Merchandising and Interiors Research Methods. 3 hours.
The philosophy of research applicable to clothing, textile, and interiors studies; methodology and interpretation of research literature.

TXMI 8110-8110L. Physical Analysis of Textiles. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: TXMI 4100/6100 and permission of department.
The physical properties of textiles important for quality control and research. New techniques and instrumentation for physical analysis of textiles.

TXMI 8120. Polymer Science. 3 hours.
Prerequisite: TXMI 4100/6100 and CHEM 2212 and CHEM 2212L.
The physics and chemistry of polymeric materials, including polymer property-structure relationships, polymer solution and rheology, polymerization, polymer reactions, and polymer characterization.

TXMI 8140. Environmental Aspects of Textiles. 3 hours.
Prerequisite: TXMI 4520/6520.
Environmental issues related to textile manufacturing. Examination of water, air, noise, and solid pollution controls and legislation and their impact on the textile industry.

TXMI 8170. Color Science. 3 hours.
Prerequisite: [TXMI 3520 and MATH 2200 and MATH 2200L] or permission of department.
Development of color order systems and color theory in relation to color vision, light, and optics; problems in visual and instrumental color measurement of materials with emphasis on textile materials.

TXMI 8180. Physics of Textile Structures. 3 hours.
Prerequisite: [(TXMI 3520 and TXMI 4100/6100) and (PHYS 1111-1111L or PHYS 1211-1211L)] or permission of department.
Theoretical analysis of fine fiber structure, physical properties of yarns, fabric shear deformation and bending. Evaluation of interrelationships among fiber structure, yarn structure, fabric geometry, and fabric performance.

TXMI 8190. Dyeing Theory. 3 hours.
Prerequisite: TXMI 4110/6110 or permission of department.
Textile dyeing, with emphasis on mathematical descriptions of equilibrium and kinetic processes of dye absorption.

TXMI 8500. Contemporary Topics in Textiles, Merchandising and Interiors. 2 hours.
Prerequisite: Permission of department.
Current specialized topics in textiles, clothing, and furnishings. Focus on economic, environmental, and social factors related to textiles, clothing, and furnishings.

TXMI 8900. Textiles, Merchandising and Interiors Seminar. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Research and theory in clothing, textiles, and furnishings. Intensive reading and discussion of selected topics to be presented by advanced students, faculty, and guest speakers.

TXMI 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

TXMI 9010. Directed Research. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Independent study and/or research under supervision of an instructor.

TXMI 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

The Daniel B. Warnell School of Forest Resources

Arnett C. Mace, Jr., *Dean*
Scott A. Merkle, *Graduate Coordinator,*
542-6112
(Forest Resources Building)

Graduate study opportunities in the Warnell School of Forest Resources encompass numerous disciplines needed to understand and effectively manage renewable natural resources. Graduate training and research are conducted in the general areas of fisheries and aquaculture; forest biology and silviculture; forest business management; forest management and biometrics; forest products; forest resource economics; forest resource information systems; forest resource management and policy; forest soils, hydrology, and environmental systems; and wildlife ecology and management.

Excellent facilities are available for graduate study and research. The School of Forest Resources is housed in a complex of four buildings, two of which are devoted primarily to graduate education and research. Two modern U.S. Forest Service research laboratories, located adjacent to the School, provide excellent opportunities for cooperative research in silviculture and wood utilization. In addition, the U.S.G.S. Biological Resources Division maintains the Georgia Cooperative Fisheries and Wildlife Unit and the Patuxent Wildlife Research Center in association with the School of Forest Resources.

The School of Forest Resources offers the Master of Forest Resources, MS and PhD degrees, and participates in the MS and PhD interdisciplinary program in toxicology, see the section in this bulletin titled, "General Degrees: Interdisciplinary Program."

FORS 4000/6000-4000L/6000L. Forest Soil Management. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L.
Undergraduate corequisite: FORS 4010-4010L.
Morphological, physical, and chemical soil properties affecting tree growth and forest productivity; evaluation of soils and site quality; preparation of forest sites for planting, diagnosis, and correction of nutrient limitations; use of forest soil systems for waste treatment.

FORS 4020/6020. Genetics and Breeding of Forest Trees. 3 hours.
Undergraduate prerequisite: BIOL 1108-1108L.
Genetic variation in forest trees; harnessing natural variation and creating new variation to meet breeding objectives; biological and economic consequences of tree domestication; conservation of genetic resources.

FORS 4030/6030. Regional Silviculture. 3 hours.
Undergraduate prerequisite: FORS 4010-4010L.
Identification of the major forest regions of the United States and discussion of their silvicultural management.

FORS 4050/6050-4050L/6050L. Field Mammalogy. 4 hours. 3 hours lecture and 3 hours lab per week.
Not open to students with credit in ECOL 4030/6030-4030L/6030L.
Prerequisite: FORS(ECOL) 3580-3580L or permission of school.
Mammalian diversity with emphasis on taxonomic identification, systematics, natural history, and methods of field study.

FORS 4060/6060-4060L/6060L. Field Ornithology. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: FORS(ECOL) 3580-3580L or permission of school.
Bird identification, also emphasizing ecology, evolution, behavior, and field techniques.

FORS 4110/6110-4110L/6110L. Forest Hydrology. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: ENGR 3410 or CRSS (FORS) 3060-3060L or GEOL 4220/6220 or GEOG 4030/6030 or ECOL 3520 or CRSS 3050-3050L or CRSS 4600/6600-4600L/6600L.
Multidisciplinary examination of the terrestrial components of the hydrologic cycle focusing on the qualitative analysis of precipitation, snowmelt, runoff generation, routing, infiltration, and subsurface flow and transport. Emphasis is on the definition of hydro-

logic processes, identification of hydrologic resources, development of environmental monitoring techniques, and application to hydrologic resources management.

FORS 4120/6120. Quantitative Methods in Hydrology. 3 hours.
Undergraduate prerequisite: ENGR 3410 or CRSS (FORS) 3060-3060L or FORS 4110/6110 or GEOL 4220/6220 or GEOG 4030/6030 or CRSS 4600/6600-4600L/6600L or permission of school.
Advanced analysis of hydrologic processes to provide a theoretical understanding of precipitation, evapotranspiration, streamflow, groundwater occurrence and movement, and soil zone flow and transport. Emphasis is upon quantitative methods used in conjunction with field and laboratory data to identify flow and transport dynamics in hydrologic systems.

FORS 4130L/6130L. Field Methods in Hydrology. 2 hours. 4 hours lab per week.
Undergraduate prerequisite: ENGR 3410 or CRSS (FORS) 3060-3060L or FORS 4110/6110 or GEOL 4220/6220 or GEOG 4030/6030 or CRSS 4600/6600-4600L/6600L.
Field data acquisition methods to hydrologic systems are used to determine precipitation quantity and quality, evapotranspiration, streamflow, groundwater occurrence and movement, and soil zone transport processes. Physical and chemical measurements are coupled to determine flow paths, mass balances, and the environmental fate of solutes.

FORS 4160/6160-4160L/6160L. Environmental Monitoring. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: CRSS(FORS) 3060-3060L and STAT 2000.
Design, implementation, and interpretation of sampling programs for environmental systems (especially aquatic systems) for monitoring, regulatory activities, quality control, scientific study, and impact assessment.

FORS(CRSS)(ENGR)(GEOL) 4170/6170. Hydrology, Geology, and Soils of Georgia. 3 hours.
Prerequisite: Permission of school.
This field course focuses on the physical environment of Georgia by examining the diverse geology, soils, and surface and subsurface hydrologic processes within the state. We will travel to all of Georgia's physiographic areas, visiting mines, farms, forests, wetlands, rivers, lakes, and estuaries to explore the influence of human activities on the physical environment.

FORS(ANTH)(RLST) 4271/6271. Field Studies in Natural Resources. 1-9 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Field studies to explore the management and conservation of natural resources with a focus on issues related to forestry, wildlife, ecology, recreation and tourism, geology, and/or coastal/water resources. The impact of humans on these resources will also be emphasized.

FORS 4300/6300-4300L/6300L. Management of Wildlife Habitat. 4 hours. 3 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: [FORS 3020-3020L and FORS 3300] or permission of school.
Principles and practices related to the management of forested ecosystems for wildlife and biological diversity, with emphasis on habitat management at the stand and landscape level. Habitat management through use of appropriate silvicultural practices, wildlife enhancement techniques, and regulations is evaluated.

(FORS)ECOL 4310/6310-4310L/6310L. Limnology. 4 hours. 3 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: ECOL(BIOL) 3500-3500L or FORS 3300.
Aquatic ecosystems (lakes and streams) and their biota. Linkages between terrestrial and aquatic ecosystems.

FORS 4320/6320. Wildlife Physiology and Nutrition. 3 hours.
Undergraduate prerequisite or corequisite: FORS 3300 or permission of school.
An advanced course relating animal physiology and nutrition to wildlife ecology and management.

FORS 4330/6330-4330L/6330L. Water Quality Management in Fisheries and Aquaculture. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: CHEM 1212 and CHEM 1212L.
Chemical and biological aspects of water quality, with emphasis upon relationships between water quality and fish production. Practical information on water quality management and related fields.

FORS 4340/6340. Endangered Species Management. 3 hours.
Undergraduate prerequisite: FORS(ECOL) 3580-3580L or FORS 3010-3010L or BTNY 4650/6650-4650L/6650L or permission of school.
Factors affecting extinctions and declines in biodiversity, including laws, policies, and management activities designed to protect species and critical habitats.

FORS(ECOL) 4360/6360. Fish Ecology. 4 hours.
Undergraduate prerequisite: ECOL(BIOL) 3500-3500L or FORS 3020-3020L.
Undergraduate prerequisite or corequisite: ECOL 4050/6050-4050L/6050L.
Lectures and discussions will be used to provide an interactive exploration of the ecology of fishes. Topics include: foraging, reproduction, habitat selection, niche, competition, and the mechanisms controlling fish biodiversity. Instruction includes both the status of a topic and appropriate research designs. The latter materials will be relevant to most animal taxa.

FORS 4370/6370-4370L/6370L. Fish Physiology. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: ECOL(FORS) 3260-3260L or permission of school.
Basic fish physiology with an emphasis on the effects of environmental stresses on physiological functions of fish.

(FORS)MARS 4380/6380-4380L/6380L. Marine Fisheries Biology. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L and permission of department.
Interaction of oceanographic processes with the life histories and productivity of marine fisheries species, and the human interactions with major marine fisheries.

FORS 4570L/6570L. Practical Wood Identification. 2 hours. 4 hours lab per week.
Identification of domestic and commercial tropical woods.

FORS 4610/6610-4610L/6610L. Forest Mensuration. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: FORS 3000-3000L and FORS 3610-3610L.
Direct measurement and indirect estimation of primary and secondary forest products. Measures of stand productivity, density, and growth.

FORS 4620/6620. Timber Management. 3 hours.
Undergraduate prerequisite: FORS 4610/6610-4610L/6610L.
Organization and management of forest properties for the production of commercial forest products.

FORS 4630L/6630L. Computational Methods and Computer Models in Forestry. 2 hours. 0 hour lecture and 4 hours lab per week.
Undergraduate prerequisite: FORS 4610/6610-4610L/6610L.
Spreadsheets and forestry software packages to solve inventory and growth prediction problems.

FORS 4640/6640-4640L/6640L. Forest Inventory. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: FORS 4610/6610-4610L/6610L.
Planning forest inventories and comparison of various equal and unequal probability sampling concepts; permanent and temporary forest sampling procedures; current stand and future growth estimation principles.

FORS 4710/6710-4710L/6710L. Quantitative Decision Methods for Forest Management. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: FORS 3610-3610L and FORS 3710-3710D.
Analysis methods applicable to forest management planning and decision making in forestry. Particular emphasis on optimization procedures and financial analysis.

FORS 4800/6800-4800D/6800D. Forest Resources Policy. 3 hours.
Undergraduate prerequisite: FORS 3710-3710D or permission of school.
Forest policy as a process, establishing forestry agendas, political decision models, political institutions and interest groups, policy in organizations, current issues.

FORS 4890/6890. Field Methods in Wildlife Management and Research. 1 hour.
Prerequisite: Permission of school.
Field course providing personal experience in field methods used by wildlife biologists (prescribed burning, wildlife capture/handling, population assessment, radiotelemetry, habitat surveys, etc.).
Non-traditional format: This course will be taught entirely in the field during the Maymester. An intensive 6-day and 5-night field trip to an off-campus site is required.

FORS 4900/6900-4900L/6900L. Wildlife Damage Management. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: FORS 3300 or FORS (ECOL) 3580-3580L or permission of school.
Theory and practice of assessing and controlling damage done by wild and feral vertebrate animals, especially mammals and birds. Emphasis is on protecting agricultural and forest crops and property.

FORS 4930/6930. Wildlife Ecology and Management for Teachers. 3 hours.
Not open to students with credit in FORS 3300 or FORS 5310/7310-5310L/7310L.
Prerequisite: (BIOL 1103 and BIOL 1103L) or BIOL 1108-1108L.
The scientific and technical aspects of wildlife management. Students will acquire a basic understanding of wildlife management that will enable them to teach

at the middle and high school level. Lecture/lab format with field trips.

FORS 5010/7010. Urban Tree Management. 3 hours.
Undergraduate prerequisite: BTNY 1210-1210L or BIOL 1104-1104L or BIOL 1108-1108L.
Establishment and maintenance of trees in urban environments. Nature and benefits of trees, planting, and soil management; pruning, repair, and protection; stress management; values of urban trees.

FORS 5250/7250. International Issues in Wildlife Conservation. 2-4 hours. Repeatable for maximum 6 hours credit.
An overseas, field-based course that explores wildlife conservation and management topics and issues in the host country. Includes lectures and field projects related to sustainable use of wildlife and human conflicts with wildlife.

FORS 5310/7310-5310L/7310L. Techniques in Wildlife Population Management. 4 hours. 2 hours lecture and 6 hours lab per week.
Undergraduate prerequisite: [FORS(ECOL) 3580-3580L and PGEN 3580-3580L] or permission of school.
Field and laboratory methods commonly used by professional wildlife ecologists to analyze and manipulate animal populations.

FORS 5360/7360-5360L/7360L. Fisheries Management. 3 hours. 2 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Principles, methods, and techniques used in the management of freshwater and marine fisheries resources. Practical, theoretical, and ethical questions are addressed.

FORS 5380/7380-5380L/7380L. Fish Culture. 3 hours. 2 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: BIOL 1108-1108L.
Biological and abiological aspects of extensive and intensive culture of freshwater fishes. Emphasis is on species and methods utilized in the eastern United States.

(FORS)(ANTH)RLST 5400/7400-5400L/7400L. Parks and Ecotourism Management. 3 hours. 2 hours lecture and 2 hours lab per week.
An introduction to the sustainable planning, development, and management of parks, protected areas and ecotourism, worldwide. Classroom lectures will be combined with a field trip, guest speakers, and a group case study to examine six key components of sustainable protected areas and ecotourism management.

FORS(RLST) 5410/7410. Wilderness Management. 3 hours.
Origins of the wilderness movement; wilderness values; scope of wilderness management as limited by laws and philosophy; principles of wilderness management; and review status and management of non-roaded natural areas.

FORS 5720/7720-5720L/7720L. Forest Harvesting and Roads. 3 hours. 2 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: FORS 3000-3000L.
Undergraduate prerequisite or corequisite: FORS 4010-4010L.
Techniques and systems for harvesting and roading forests. Production, cost, quality, safety, and environmental protection measures. Field exercises stress planning of harvesting and road construction operations to achieve desired objectives.

FORS 5730/7730. Principles of Forest Management. 3 hours.
Undergraduate prerequisite: BIOL 1104-1104L or BTNY 1210-1210L or permission of school.
Practical forestry in the South with emphasis on the management of private forest land. Topics include forest regeneration, tree identification and growth, basic measurements of tree crops. Not open to FRS majors.

FORS 5740/7740. Forest Operational Planning. 3 hours.
Undergraduate prerequisite: (FORS 3710-3710D and FORS 4010-4010L and FORS 4620/6620) or permission of school.
Integration of silviculture, finance, forest engineering, biometrics, and ecology to analyze industrial problems.

FORS 5750/7750. Procurement and Management of Wood Fiber Supply. 3 hours.
Undergraduate prerequisite: (Enrollment in Professional Program of WSFR) or permission of school.
Management of the wood fiber supply, program management functions, legal aspects and analysis of current issues in raw material management.

FORS 5760/7760. Forest Products Marketing. 3 hours.
Undergraduate prerequisite: (Enrollment in Professional Program of WSFR) or permission of school.
Planning, organizing, and managing forest products marketing programs, domestically and internationally. Focus on developing marketing strategies and implementation of marketing plans in the context of forest industry structures and distribution channels.

FORS 5770/7770-5770L/7770L. Applied Population Dynamics. 4 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: Senior standing.
Foundations of population dynamics from an applied perspective. Exponential and logistic population growth, life tables, multiple species interactions, and basic population models. Sampling design and analytical methods for estimating abundance and demographic parameters. Application of population models to harvest management and small population management. Integrative student project required.

FORS 5820/7820. Natural Resources Law for Managers and Administrators. 4 hours.
Statutory, case law, and regulations concerning resource conservation, allocation, and development. Modern, systems-sensitive regulatory programs affecting natural resources administration analyzed. Examination of the division and nature of the functions of the judicial and executive branches of government.

FORS 5850/7850. Forest Policy Issues. 2 hours.
Undergraduate prerequisite: POLS 1101-1101D or FORS 4800/6800-4800D/6800D.
Forestry issues and political processes. A general framework for analyzing current issues is developed and specific issues are analyzed each year.

(FORS)(ANTH)ECOL 6140. Principles of Conservation Ecology and Sustainable Development II. 3 hours.
Prerequisite: ECOL 6080.
Social science dimensions of conservation and sustainable development; social, economic, and political considerations in managing natural resources; policy-level aspects to project implementation.

FORS 6150. Control and Systems Theory for the Environmental Scientist. 3 hours.
Prerequisite: MATH 2700.
Development of models of the dynamic behavior of environmental systems from the perspective of process engineering and control. State-space, continuous-time, and discrete-time representations. Introduction to, and tutorials in, the MATLAB-SIMULINK software package.

FORS 6540-6540L. Physical and Mechanical Properties of Wood. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: FORS 4500-4500L.
Concepts in stress/strain development and the viscoelastic response. Wood moisture relationships with mechanical properties.

FORS 6750. Experimental Methods in Forest Resources Research. 3 hours.
Prerequisite: STAT 6220.
Statistical procedures and computer software to collect, analyze, and interpret forest resources research data.

FORS 6760-6760L. Quantitative Models for Forest Resources Managers. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: STAT 6220 or permission of school.
Model forms used to simulate tree and forest stand development as well as models used to simulate the growth of various wildlife and fish species. Parameter estimation methods and model evaluation included.

FORS 7000. Master's Research. 1-18 hours. Repeatable for maximum 100 hours credit.
Prerequisite: Permission of school.
Research while enrolled for a master's degree under the direction of faculty members.

FORS 7020. Tree Morphogenesis. 3 hours.
Prerequisite: Permission of school.
Differentiation of tree structures and functions. Topics include the shoot and root apex, the cambium, phase change and differentiation of tissues and organs in vitro.

FORS 7210-7210L. Spatial Management of Forest Resources. 3 hours. 2 hours lecture and 2 hours lab per week.
Not open to students with credit in GEOG 4370/6370-4370L/6370L or GEOG 4470/6470-4470L/6470L.
Applications of spatial information in forest resource management. Topics include: the heterogeneity of the forest, spatial measures and models of forests, data accuracy and decision quality, and information needs assessment. Both raster and vector GIS are used in class laboratory exercises.

FORS 7300. Master's Thesis. 1-12 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of school.
Thesis writing under the direction of the major professor.

FORS 7630. Intensive Forest Management. 3 hours.
Prerequisite: FORS 4010-4010L.
Effects of silvicultural treatments on growth, yield, and product distributions of forest stands. Effects of vegetation management at various points in the life of the stand, fertilization, thinning, pruning, and initial spacing included. Effect magnitude as an objective criterion for management decision making is emphasized.

FORS 7640. Advanced Forest Management. 3 hours.
Prerequisite: FORS 4620/6620 or permission of school.
Models for estimating forest yields at different points in time, including models for uneven-aged stands, and thinned stands, and methods for adjusting for effects of cultural treatments. Whole stand and diameter distribution yield models examined.

FORS 7710. Advanced Forest Economics. 3 hours.
Prerequisite: ECON 2106.
Prerequisite or corequisite: FORS 4710/6710-4710L/6710L.
Microeconomic and production economics theory with forest resources applications, financial analysis of investments, social benefit-cost analysis.

FORS 7780. Timberland Accounting, Finance, and Taxation. 3 hours.
Prerequisite: ACCT 7990.
Timberland accounting, financial analysis of forest products company operations, financial evaluation of timberland investment and forest management decision alternatives, linkages between financial markets and timberland, timber taxation, and strategies involving forest assets in estate planning.

FORS 7790. Forest Finance Decisions. 3 hours.
Prerequisite: FORS 7780 or permission of school.
Analysis of forest asset financing, acquisition, management, and disposition decisions from a financial perspective. Development of financial strategies for a forestry operation, timberland portfolio management, asset pricing models and timberland, the behavior and evolution of forest asset markets, timber access options, and entrepreneurship in forestry.

FORS(AAEC) 7860. Resource Economics and Management. 3 hours.
Prerequisite: AAEC 6580-6580L or ECON 8000.
Economic and physical concepts of scarcity, the impact of market and social factors on resource use, and the optimal management of renewable and nonrenewable resources.

FORS 7900-7900L. Forest Operations Management and Planning. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: Permission of school.
An investigation of issues and techniques in planning, development, and management of forestry business operations. Content is divided into two components: operations strategy formulation and operations strategy implementation. Special emphasis will be placed on the application of advanced quantitative techniques to forestry operations management problems.

FORS 7981. Fisheries and Aquaculture Problems. 1-12 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of school.
Individual student problems pertaining to fisheries and aquaculture at the masters level.

FORS 7982. Forestry Problems. 1-12 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of school.
Individual student problems pertaining to forestry at the masters level.

FORS 7983. Forest Soils, Hydrology and Environmental Systems Problems. 1-12 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of school.
Individual student problems pertaining to forest soils, hydrology, and environmental systems at the masters level.

FORS 7984. Wildlife Ecology and Management Problems. 1-12 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of school.
Individual student problems pertaining to wildlife ecology and/or management at the masters level.

FORS 7990. Supervised Professional Practicum in Forest Resources. 1-10 hours. Repeatable for maximum 40 hours credit.
Prerequisite: Permission of school.
University-level teaching, including the presentation of lectures and/or laboratory sessions under faculty supervision, at the masters level.

FORS 8000. Forest Resources Seminar. 1-2 hours. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of school.
Fundamental and applied topics relating to multiple-use management of forests and wild land, including literature review and current advances.

FORS 8010. Forest Business Seminar. 1 hour.
Prerequisite: Permission of major or permission of school.
Current and emerging issues in forest business management, including literature review and case presentations. Students will be expected to give brief presentations on assigned topics.

FORS 8030. Advanced Tree Physiology. 3 hours.
Prerequisite: FORS 3040 or permission of school.
Recent research in the processes that directly or indirectly affect carbon gain and allocation, including photosynthesis, respiration, nutrient uptake, water relations, and growth of trees.

FORS 8040. Current Topics in Forest Biotechnology. 3 hours.
Prerequisite: Permission of school.
Applications of genetic, biochemical, and physiological principles to forest trees; forest products and organisms affecting forests, including in vitro propagation, genetic engineering, genomic mapping, bioprocessing and biological control of tree pests and pathogens.

FORS 8050. Forest Stand Dynamics. 3 hours.
Prerequisite: FORS 4010-4010L or permission of school.
Dynamics of mortality, growth, and biomass allocation in forest stands during the four stages of development (stand initiation, stem exclusion, transition, and old growth) with emphasis on silviculture of southeastern United States forests.

FORS 8060. Advanced Forest Policy and Law. 3 hours.
Legal basis and fundamentals of policy affecting private and public forest resource use. Private property in forests and public regulation, income, estate, and property tax policy, resource procurement systems for industry, industrial organization of timberland ownership, foundations of modern federal forest policy, selected topics of student interest.

FORS(CRSS)(HORT) 8070. Plant Biotechnology Research Journal Seminar. 1 hour. Repeatable for maximum 4 hours credit.
Critical review and discussion of current research reports in journals relating to plant biotechnology.

FORS 8100. Advanced Forest Ecology. 3 hours.
Prerequisite: FORS 3020-3020L or ECOL(BIOL) 3500-3500L or permission of school.
Factors regulating the structure and function of forest ecosystems, forest energetics, community dynamics, and research methods.

FORS 8120. Hillslope Hydrology Seminar. 3 hours.
Prerequisite: FORS 4110/6110 or GEOL 4220/6220 or GEOG 4030/6030 or CRSS 4600/6600-4600L/6600L or permission of school.
Current concepts used to describe water and chemical movement on watersheds scales. Conceptual models of flow at watershed scales, saturated/unsaturated flow and transport processes, and techniques for measuring soil moisture, soil potential, and lateral surface and subsurface flow.

FORS 8150. System Identification for the Environmental Scientist. 3 hours.
Prerequisite: FORS 6150.
Calibration of models of environmental systems against field data. Methods of parameter estimation, recursive estimation, time-series analysis and filtering theory. Model validation and analysis of uncertainty. Case studies in surface and groundwater quality and aquatic ecosystems.

FORS 8160. Environmental Process Control Laboratory. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: FORS 6150 or permission of school.
Instrumentation and systems for real-time remote sensing and control of the behavior of environmental systems and contaminant treatment technologies. Functions of on-line respirometry and intelligent/software sensors. Principles and integration of sample retrieval, preparation, analysis, data storage, communication, and presentation.

FORS 8170. Environmental Systems Analysis and Control. 1-3 hours. 0-3 hours lecture and 0-3 hours lab per week.
Prerequisite: Permission of school.
Current topics, books and articles in inter-disciplinary studies of the analysis and regulation of environmental systems. Cross-disciplinary thinking through a diverse set of topics (such as choice of wastewater infrastructure for sustainable cities, or protocol for model validation).

FORS 8180. Principles of Forest Land Treatment. 2 hours.
Basic principles for designing forested systems for treatment of municipal and industrial biosolids and wastewater. Hydrologic loading and assimilation/degradation pathways for N, P, metals and organics; methods for determining land-limiting constituents.

FORS 8200. Scientific Research in Forest Resources. 3 hours.
Prerequisite: Permission of school.
The scientific method, standards for good scientific conduct, research proposal writing and reviewing skills are emphasized.

FORS 8210-8210L. Scientific Communication in Natural Resources. 3 hours. 2 hours lecture and 2 hours lab per week.
Preparation of scientific manuscripts for publication and presentation of papers at scientific conferences. Preparation of individual manuscripts, figures, and tables; writing with clarity, brevity, and word economy; dealing with journal editors and reviewers; reviewing and editing manuscripts; preparing proposals for funding; presentation of oral and poster papers at scientific conferences; and preparation of visual aids.

FORS 8290. Wildlife Telemetry. 1 hour.
Radio-telemetry is a widely used and important technique in wildlife management and conservation. This

course will explore the various aspects of applications of the technique, analysis of telemetry data, and the numerous pitfalls researchers encounter in the field. Rapid changes in technology and use of wildlife telemetry outside of traditional applications will be discussed.

FORS 8300. Wildlife and Fisheries Seminar. 1-2 hours. Repeatable for maximum 6 hours credit.
Recent advances in wildlife and fisheries research and management.

(FORS)(BTNY)ECOL 8310. Population Ecology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L and permission of department.
Advanced ecological theory to biological populations. Mathematical and evolutionary treatment of population growth and regulation, niche theory, foraging theory, predator-prey theory, habitat selection, and competition.

FORS 8320-8320L. Landscape Ecology. 3 hours. 2 hours lecture and 3 hours lab per week.
The emerging field of landscape ecology, emphasizing the study of large land areas and the effects of spatial pattern on ecological processes. Fundamental theories, analysis tools, research methods, and their applications to natural resource management at broad spatial scales.

FORS 8350-8350L. Waterfowl and Wetland Management. 4 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: Permission of school.
Ecology of North American waterbirds (ducks, geese, swans, shorebirds, rails, gallinules, wading birds) and their habitats. Techniques for managing waterfowl populations by harvest regulations and habitat manipulation. Identification and requirements of important wetland plants.

FORS 8360. Quantitative Approaches to Conservation Biology. 4 hours.
Course format utilizes lectures, discussions of journal articles, and computer simulation exercises (including model selection/analysis) to explore new quantitative approaches to conservation biology. Topics include habitat selection theory, landscape ecology, and population viability analysis. Students should have previous courses in ecology and statistics.

FORS 8390-8390L. Estimation of Fish and Wildlife Population Parameters. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of school.
Statistical methods for estimating parameters and testing hypotheses of fish and wildlife populations. Models of population dynamics. Sampling and estimation methods including line-transect, mark-recapture, removal, catch-effort, tag-recovery, and analysis of failure times. Optimization and decision-theoretic methods for wildlife and fisheries management.

(FORS)BTNY(ECOL) 8410. Community Ecology. 4 hours.
Prerequisite: ECOL 4010/6010-4010L/6010L and STAT 4220.
The applicability of advanced theory to multi-species communities. Patterns and processes that influence species composition, diversity, and function. Topics include deterministic vs. stochastic regulation, succession, resource partitioning, patch dynamics, island biogeography, and food webs.

FORS 8480. Quantitative Modeling of Forest Stands. 3 hours.
Prerequisite: Permission of school.
Application of statistical and mathematical modeling concepts along with computer technology to develop models of forest tree and stand growth and yield. Formulation of mathematical models with proper biological behavior and estimation of parameters using compatible growth and yield structures and systems fitting methods.

FORS 8490. Sampling Techniques for Biological Populations. 3 hours.
Prerequisite: [STAT 4240/6240 and STAT 4510/6510] or permission of school.
Theory of probability sampling procedures for populations of interest to forest resource managers.

FORS(PARA) 8500-8500L. Diseases of Wildlife I. 5 hours. 3 hours lecture and 6 hours lab per week.
Prerequisite: Permission of school.
Prerequisite or corequisite: FORS(PARA) 8510-8510L.
Fundamental causes of disease-induced morbidity and mortality among free-ranging wildlife populations. Etiology, pathogenesis, clinical signs, lesions, epidemiology, diagnosis, and management significance of diseases produced by viral and microbial pathogens.

FORS(PARA) 8510-8510L. Diseases of Wildlife II. 5 hours. 3 hours lecture and 6 hours lab per week.
Prerequisite: Permission of school.
Prerequisite or corequisite: FORS(PARA) 8500-8500L.
Fundamental causes of disease-induced morbidity and mortality among free-ranging wildlife populations. Emphasis is on the etiology, pathogenesis, clinical signs, lesions, epidemiology, diagnosis, and management significance of diseases of parasitic, toxicologic, or miscellaneous etiologies.

FORS 8550. Chemistry and Synthesis of Wood Adhesives. 3 hours.
Prerequisite: CHEM 2410 and CHEM 2410L.
Synthetic resins chemistry including their raw materials, formulations and procedures of their synthesis, and their chemical and physical properties as related to wood adhesive formulations.

FORS(GEOL) 8730. Aquifer Mechanics. 3 hours.
Prerequisite: FORS 4110/6110 or GEOL 4220/6220 or GEOG 4030/6030 or CRSS 4600/6600-4600L/6600L or permission of school.
Mechanics of flow through subsurface media, including flow in confined, water table, and leaky aquifers, delayed yield, partially penetrating wells, boundaries, multiple wells, dual porosity media, and fractured rock; use of aquifer tests to estimate aquifer hydraulic properties.

(FORS)GEOL 8740. Hydrologic Flow and Transport Modeling. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: GEOL 8700 or FORS 4120/6120.
Solutions of surface and subsurface flow and transport problems including finite difference, finite element, and boundary integral methods. Analytic techniques include Laplace-, z-, and Fourier-transform, complex variable, and separation of variables methods. Application to problems commonly found in the environmental field, including capture zones, particle-tracking, advection-dispersion, and non-aqueous phase liquids.

FORS 8780. Issues in Timberland Finance and Management. 3 hours.
Prerequisite: FORS 7780.
Current and emerging issues in financing and managing timberland properties. Valuation, risk analysis, and forms of timberland control, at domestic and international levels.

FORS 8981. Fisheries and Aquaculture Problems. 1-12 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of school.
Individual student problems pertaining to fisheries and aquaculture at the doctoral level.

FORS 8982. Forestry Problems. 1-12 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of school.
Individual student problems pertaining to forestry at the doctoral level.

FORS 8983. Forest Soils, Hydrology and Environmental Systems Problems. 1-12 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of school.
Individual student problems pertaining to forest soils, hydrology, and environmental systems at the doctoral level.

FORS 8984. Wildlife Ecology and Management Problems. 1-12 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of school.
Individual student problems pertaining to wildlife ecology and management at the doctoral level.

FORS 9000. Doctoral Research. 1-18 hours. Repeatable for maximum 150 hours credit.
Prerequisite: Permission of school.
Research while enrolled for a doctoral degree under the direction of faculty members.

FORS 9210. Applied Research in Forest Resources. 1-18 hours. Repeatable for maximum 70 hours credit.
Prerequisite: Permission of school.
Individual guidance in the development of a significant project related to the student's major field of study. Preparation of a report meeting professional standards reviewed by a faculty committee.

FORS 9300. Doctoral Dissertation. 1-12 hours. Repeatable for maximum 36 hours credit.
Prerequisite: Permission of school.
Dissertation writing under the direction of the major professor.

FORS 9990. Supervised Professional Practicum in Forest Resources. 1-10 hours. Repeatable for maximum 70 hours credit.
University-level teaching, including the presentation of lectures and/or laboratory sessions under faculty supervision, at the doctoral level.

Graduate School

Maureen Grasso, *Dean*
542-4806
(Boyd Graduate Studies Research Center)

Courses having a Graduate School prefix are listed below:

GRSC 7770. Graduate Internship. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of school.
Provides graduate teaching assistants with knowledge of pedagogical approaches and available support systems. Special sections are reserved for international students, with focus on use of language, pedagogy, and cultural aspects of teaching in this country.

GRSC 9270. Graduate Study Completion. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of school.
Designed for graduate students completing degree requirements who will be using staff time or University facilities and for whom no regular course is appropriate.

The Henry W. Grady College of Journalism and Mass Communication

John Soloski, *Dean*
Leonard N. Reid, *Associate Dean, Graduate Studies,* 542-7833 or 542-3676
(Journalism Building)

The graduate studies program of the Grady College of Journalism and Mass Communication offers three graduate degrees for students preparing for professional and academic careers: the Master of Arts degree, the Master of Mass Communication degree, and the Doctor of Philosophy degree.

The Master of Arts program provides advanced work and specialization for careers in advertising, journalism, mass media studies, public relations, and telecommunications. The Master of Mass Communication degree serves those students whose career goals indicate that additional course work will be more advantageous to them than completion of the traditional thesis.

The PhD program is designed to produce critical scholars capable of independent and original research. The program offers advanced study and specialization in preparing for careers in teaching and research or for positions of responsibility in mass media, industries, or government.

Applicants accepted for the master's programs and PhD program begin their program in the Fall semester. Admission is based on undergraduate grade point average, the results of the Graduate Record Examinations (GRE), a statement of purpose, and letters of recommendation, as well as previous professional experience and scholarly work.

Anyone holding a bachelor's degree from an accredited college or university is eligible to apply for admission to the master's programs. A master's degree is required for acceptance into the PhD program. The program is open both to students with undergraduate majors in journalism and mass communication and to those who have majored in other areas. Master's students without backgrounds in journalism and mass communication may be required to take 9 or more credit hours of undergraduate-level foundation courses before registering for more than 6 hours of graduate courses. If not previously completed, a course in statistics is also required.

Applications and additional information may be obtained from the Graduate Studies Office, Grady College of Journalism and Mass Communication.

Advertising and Public Relations

ADPR 5740/7740. Advertising and Communication Campaigns. 3 hours.
Undergraduate prerequisite: ADPR 3110 and ADPR 3120 and ADPR 3130 and permission of major.
Undergraduate corequisite: ADPR 5710.
Managerial and decision making processes in simulated situations with student groups functioning as advertising agencies to plan, implement, and manage advertising and communication campaigns for assigned clients.

ADPR 5790/7790. Advertising Portfolio Seminar. 3 hours.
Undergraduate prerequisite: ADPR 3110 and permission of major.
Student production and development of an advertising portfolio of their best creative work with emphasis on both verbal and visual skills.

ADPR 5950/7950. Public Relations Campaigns. 3 hours.
Undergraduate prerequisite: ADPR 3850 and JOUR 3410 and ADPR 3520 and ADPR 3130 and [(STAT 2000 or STAT 2210 or STAT 4210) or MSIT 3000] and ADPR 5910 and ADPR 5920 and permission of major.
Research, planning, and preparation of an integrated public relations campaign. Campaigns will alternate among business, governmental, and organization problems.

Journalism

JOUR 5350/7350. Advanced Newspaper Editing and Design. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: JOUR 3510 and permission of department.
Techniques of advanced newspaper editing and design, with emphasis on the visual aspects of newspaper editing.

JOUR 5360/7360. Advanced Magazine Editing and Design. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: JOUR 3510 and permission of department.
Planning, processing, and production of a magazine.

JOUR 5410/7410. Journalism Ethics. 3 hours.
Undergraduate prerequisite: JOUR 3310 and JOUR 3510.
Issues of journalistic ethics and social responsibility confronting contemporary American print media and students planning journalism careers.

JOUR 5530/7530. Editorial Writing and Issues. 3 hours.
Undergraduate prerequisite: JOUR 3410 and permission of department.
Creation, production, and analysis of editorials and editorial pages. Methods of identifying and researching issues and organizing, writing, and editing editorials will be stressed along with methods of analyzing editorials and editorial pages.

JOUR 5580/7580. Magazine Article Writing. 3 hours.
Undergraduate prerequisite: JOUR 3310 and JOUR 3510 and permission of department.
Methods and procedures in writing various types of articles and features for magazines, magazine sections of newspapers, and other periodicals.

JOUR 5590/7590. Critical Writing and Reviewing. 3 hours.
Undergraduate prerequisite: JOUR 3510 and permission of department.
Criticizing and reviewing popular culture and fine arts offerings, such as films, television, pop music and theatre, dance and classical music — for newspapers, magazines, and broadcast media.

JOUR 5600/7600. Investigative Reporting. 3 hours.
Undergraduate prerequisite: JOUR 5300 and permission of department.
Techniques, methods, and practices of investigative, interpretive, and in-depth reporting for print media. Projects in public affairs reporting are developed.

JOUR 5620/7620. Magazine Management. 3 hours.
Undergraduate prerequisite: JOUR 3310.
Finance and planning skills required to manage the business side of a magazine. Attention will be given to the various systems used in the magazine industry to produce a finished product.

JOUR 5640/7640. Newspaper Management. 3 hours.
Undergraduate prerequisite: JOUR 3310.
Business and editorial management of newspapers, including newsroom, circulation, advertising, and promotion strategies.

JOUR 5660/7660. Journalism in the Secondary School. 3 hours.
News gathering, news writing, media law and ethics, copy editing, typography, photography, design, desktop publishing, broadcast news, and business practices of newspapers, with specific emphasis on advising staffs of high school newspapers and other media and editing public relations publications for schools.

JOUR 5670/7670. Contemporary American Newspapers. 3 hours.
Undergraduate prerequisite: JOUR 3310.
The newspaper and its role in America today. Concentration is on content, policy, influence, social responsibility and ethics, economics, marketing strategies, and technology. Leading newspapers in various regions are examined closely.

JOUR 5700/7700. Advanced Magazine Article Writing. 3 hours.
Undergraduate prerequisite: JOUR 5580/7580 and permission of department.
An advanced professional course utilizing research and writing techniques to produce articles and features for specific magazine audiences.

JOUR 5800/7800. Computer Assisted Reporting. 3 hours.
Undergraduate prerequisite: (JOUR 5300 or JOUR 5580/7580) and permission of department.
Use of computers in journalism to gather, analyze, and present information. Subjects include spreadsheets, databases, and electronic searches in public and commercial sources.

JOUR 5850/7850. Information/Explanation Graphics. 3 hours.
Undergraduate prerequisite: JOUR 3510.
Transforming raw media information into visually informative and attractive presentations through graphic and page design.

JOUR 7310. Journalism Projects. 3 hours.
Prerequisite: JRMC 8000 and JRMC 8010.
Directed research resulting in written projects in selected areas of media. Open only to Journalism MMC students.

Journalism Core

JRLC 5040/7040. Law of Mass Communication. 3 hours.
Undergraduate prerequisite: (ADPR 3100 or ADPR 3850 or JOUR 3310 or TELE 3010) and permission of school.
First Amendment principles and communication law affecting print, telecommunications, advertising, and public relations.

JRLC 5490/7490. History of the Mass Media in the United States. 3 hours.
Mass media in the United States from the colonial period to the present. Special attention is given to newspapers, magazines, radio, and television and their relationship to the history and development of the nation.

Journalism and Mass Communication

JRMC 7000. Master's Research. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

JRMC 7300. Master's Thesis. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

JRMC 8000. Proseminar in Mass Communication. 3 hours.
Prerequisite: Permission of department.
Research traditions in mass communication, with emphasis on historical developments within the field and intellectual perspectives of mass communication researchers. Major research streams and methodologies are introduced, discussed, and critiqued.

JRMC 8010. Research Methodology in Mass Communication Research. 3 hours.
Prerequisite: Permission of department.
Quantitative and qualitative methodologies of mass communication research, with emphasis on the research process, concepts and issues of research design, and methods of data collection. Topics introduced include measurement, sampling, focus groups and interviewing, survey and experimental design, and data analysis.

JRMC 8020. Public Opinion. 3 hours.
Prerequisite: Permission of department.
Patterns of public opinion formation including their cultural, social, and economic impact. Analysis of communication content and techniques involving public opinion and persuasion.

JRMC 8030. Mass Communication and Society. 3 hours.
Prerequisite: Permission of department.
The social, cultural, and economic analysis of the processes and effects of mass communication in contemporary society.

JRMC 8040. International Mass Communication. 3 hours.
Prerequisite: Permission of department.
The systems of mass communication throughout the world; philosophies behind them; social, political, and economic reasons why a given kind of pattern develops; comparative analysis of operating procedures of various media.

JRMC 8050. Research and Directed Readings in Mass Communication. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research and directed readings in mass communication under the direction of a sponsoring graduate faculty member.

JRMC 8100. Advertising and Communication Management. 3 hours.
Prerequisite: Permission of department.
Major decision processes in advertising and communication management.

JRMC 8110. Advertising Media Planning. 3 hours.
Prerequisite: JRMC 8100 and permission of department.
Media planning function and theory. Emphasis will be on understanding and evaluating media theory and media for use in advertising and marketing communication programs.

JRMC 8120. Advertising and Public Relations Research. 3 hours.
Prerequisite: Permission of department.
Nature, scope, and techniques of advertising and public relations research, with emphasis on consumer markets, public, media audiences, and message effects.

JRMC 8130. Special Topics in Advertising. 3 hours.
Prerequisite: Permission of department.
Problems, issues, and research in advertising.

JRMC 8140. Public Relations Management. 3 hours.
Prerequisite: Permission of department.
Effective practices, concepts, and techniques as they apply to the management of public relations.

JRMC 8150. Public Relations Theory. 3 hours.
Prerequisite: Permission of department.
Seminal and recent research related to the construction of theory in public relations.

JRMC 8160. Special Topics in Public Relations. 3 hours.
Prerequisite: Permission of department.
Problems, issues, and research in public relations.

JRMC 8200. Telecommunications Management. 3 hours.
Prerequisite: Permission of department.
The establishment, operations, and planning of modern telecommunications media systems. Theory and practice of management in innovative technology-based industries, including radio, television, cable, satellite-to-home delivery, and recordings.

JRMC 8210. Telecommunications Policy. 3 hours.
Prerequisite: Permission of department.
Telecommunications policy making, regulation of broadcasting, cable, satellites, computer networks, and telephone; impact of technological change on the regulation of telecommunications.

JRMC 8220. Telecommunications Programming and Criticism. 3 hours.
Prerequisite: Permission of department.
Criticism and analysis of contemporary and historical programming. Examines a wide variety of content as art form, cultural product, and information source, including social, legal, and economic roles of criticism in media.

JRMC 8230. Emerging Telecommunications Technologies. 3 hours.
Prerequisite: Permission of department.
Technical, social, and economic aspects of the new telecommunications technologies.

JRMC 8240. Special Topics in Telecommunications. 3 hours.
Prerequisite: Permission of department.
Problems, issues, and research in telecommunications.

JRMC 8350. Special Topics in Journalism. 3 hours.
Prerequisite: Permission of department.
Problems, issues, and research in journalism.

JRMC 9000. Doctoral Research. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for doctoral degree under the direction of faculty members.

JRMC 9010. Mass Communication Theory. 3 hours.
Prerequisite: Permission of department.
Theoretical thinking and theories of mass communication. Emphasizes history, philosophies, and structures of theoretical explanation, and the interaction between theory and the organizations, processes, and effects of mass communication.

JRMC 9020. Quantitative Research in Mass Communication. 3 hours.
Prerequisite: (JRMC 8010 and STAT 6210) or permission of department.
Advanced quantitative approaches to mass communication research with emphasis on research design issues, data management, and statistical analyses.

JRMC 9030. Critical, Cultural, and Naturalistic Approaches to Mass Communication Research. 3 hours.
Prerequisite: JRMC 8010 or permission of department.
Paradigms, concepts, and methodologies of critical, cultural, and naturalistic approaches to mass communication research. Emphasis on ethnography, case study, interviewing, life history, textual analysis, and field observation. Research design and techniques of data collection, analysis, and presentation are studied within the context of mass communication institutions, messages, and audiences.

JRMC 9040. Historical Research in Mass Communication. 3 hours.
Prerequisite: Permission of department.
Historical research approaches to mass communication with emphasis on historical writings, the philosophy of history, and methods of data collection and analysis. Emphasis on United States mass media history.

JRMC 9050. Mass Communication Law. 3 hours.
Prerequisite: Permission of department.
The problems, issues, and research methods of mass communication law and regulation with emphasis on the critical examination of writings in the field.

JRMC 9060. Special Topics in Mass Communication. 3 hours.
Prerequisite: Permission of department.
Selected topics in mass communication.

JRMC 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

The College of Pharmacy

Svien Øie, *Dean*
Clinical and Administrative Pharmacy
Joseph T. DiPiro, *Head*
Randall L. Tackett, *Graduate Coordinator,* 542-7400
Pharmaceutical and Biomedical Sciences
Vasu Nair, *Head*
Anthony C. Capomacchia, *Graduate Coordinator,* 542-5339
(Pharmacy Building)

Graduate work leading to the MS and PhD degrees may be pursued in the areas of clinical and administrative pharmacy or pharmaceutical and biomedical sciences.

Clinical and administrative pharmacy include the general areas of pharmacy care administration and clinical and experimental therapeutics. Pharmacy care administration is the study of the economic, social, behavioral, and political aspects of pharmaceutical services. It is an interdisciplinary program which may contain elective concentration of courses in business, psychology, statistics, political science, and other disciplines which impact on ethical drug issues. The program prepares the student to address the complex socio-political problems relating to ethical drug consumption, manufacturing, distribution, and payment mechanisms.

Clinical and experimental therapeutics is a multi-disciplinary program which involves the investigation of disease processes and the therapeutic regimens in their treatment. Current areas of interest include diseases of the cardiovascular system, learning and memory, immunology, and renal diseases. Additionally, the efficacy of therapeutic regimens in special populations (e.g. geriatric, women, minority) are also of interest. The graduate program is designed to develop competencies in clinical and experimental therapeutics which is translational between the basic, applied and clinical settings.

Pharmaceutical and biomedical sciences include the general areas of pharmaceutics, pharmacology, toxicology and medicinal chemistry. Graduate studies in pharmaceutics explore and define the physical and chemical properties of pharmaceutical systems, and the mechanisms by which medication from these systems may be made available for utilization by the body. Areas of specialization include drug delivery, pharmacokinetics, biopharmaceutics, and industrial pharmacy. The multidisciplinary approach is used to solve research problems in pharmacokinetics, stability kinetics, dissolution phenomena, drug analysis, product development and dosage form design.

Pharmacology is the study of the action of chemicals on living organisms, the effects induced and their therapeutic applications. As a scientific discipline, it is based on the biological sciences with particular emphasis on physiology and biochemistry. Specific programs are available in neuropharmacology, behavioral pharmacology, biochemical pharmacology, and cardiovascular pharmacology.

Toxicology is the scientific discipline which deals with the injurious effects of chemicals on humans and other living organisms. Toxicology is a broad, multi-disciplinary field requiring expertise in a number of biological sciences, including biochemistry, physiology, pharmacology, cell biology, pathology and biostatistics. Toxicology is rapidly expanding in scope and prominence, due to the increasing use/misuse of chemicals and to the increased recognition of hazards posed by chemicals. Students may choose to work in ongoing research programs involving studies of: drug/chemical interactions; relative pharmacokinetics and toxicity of inhaled and ingested hydrocarbons; mechanisms of cytotoxic actions of halogenated organics; biochemical role of calcium in cellular injury by chemicals; influence of nutrition on chemical metabolism and toxicity; role of diet in chemically induced cancers; influence of lead exposure and drugs on harmful effects of noise.

Medicinal chemistry is unique among the specialized areas of chemistry, in that it requires a significant background in the biological sciences as well as a thorough understanding of chemistry. Areas of specialization are the synthesis of new compounds of medicinal interest, in vitro and in vivo studies of drug metabolism, and analytical studies of drugs in dosage forms and biological samples such as plasma or urine.

For a description of the MS and PhD interdisciplinary program in toxicology, see the section in this bulletin entitled, "General Degrees: Interdisciplinary Program."

PHRM 4050/6050. Principles of Medicinal Chemistry I. 3 hours.
Undergraduate prerequisite: PHRM 3060 or permission of department.
Undergraduate corequisite: PHRM 4410 and PHRM 4850.
Drugs acting on the peripheral nervous system and peripheral acting hormones and antihormones, including structure-activity relationships; mechanisms of action; storage and chemical stability reactions.

PHRM 4060/6060. Principles of Medicinal Chemistry II. 3 hours.
Undergraduate prerequisite: PHRM 3060 or PHRM 4050/6050.
Undergraduate corequisite: PHRM 4420 and PHRM 4860.
Central nervous system drugs, including their physiochemical properties, structure-activity relationships and toxicities, side effects, and drug interactions.

PHRM 4180/6180. Drug Therapy of Infectious Disease. 3 hours.
Undergraduate prerequisite: PHRM 3060 or permission of department.
Undergraduate corequisite: PHRM 4120.
Chemistry, spectrum of activity, place in therapy, stability, incompatibilities, and toxicities of antibacterials, antivirals, and antibiotics.

PHRM 4190/6190. Chemotherapy of Cancer. 2 hours.
Undergraduate prerequisite: PHRM 3060 or permission of department.
Undergraduate corequisite: PHRM 4130.
Etiology, prevention, and treatment of cancer in man. Emphasis is on the mechanism, toxicity, and side effects of anticancer agents of various antineoplastic agents.

PHRM 4200/6200. Principles of Pharmaceutics I. 3 hours.
Undergraduate prerequisite: PHRM 3200.
Undergraduate corequisite: PHRM 4120.
Biopharmaceutics and physical pharmacy as they are related to the formulation design, quality evaluation, bioavailability, and shelf-life of drugs in pharmaceutical dosage forms.

PHRM 4210/6210. Principles of Pharmaceutics II. 3 hours.
Undergraduate prerequisite: PHRM 4200.
Undergraduate corequisite: PHRM 4130.
Principles of drug delivery systems and dosage form design, formulation, storage, and utilization.

PHRM 4600/6600. Cancer: Carcinogenesis, Biology, Prevention. 2 hours.
Prerequisite: Permission of department.
Steps in cancer development, initiation, promotion, progression, metastasis, modulators of tumor promotion and progression, diet and cancer, hormone receptors, suppressor genes, oncogenes, and immunosurveillance. Nutritional epidemiology and population studies, dietary guidelines and cancer prevention strategies. Treatment strategies, therapeutic side effects, and quality of life issues.

PHRM 5260/7260. Clinical Pharmacokinetics I. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: (PHRM 4210 and PHRM 4420) or permission of department.
Basic pharmacokinetic concepts and the design and monitoring of therapeutic drug regimens. Emphasis is on learning how to analyze and interpret patient-specific drug concentration time data.

PHRM 5270/7270. Clinical Pharmacokinetics II. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: PHRM 5260/7260 or permission of department.
Nonlinear pharmacokinetics and effects on therapeutic drug regimens; emphasis on drug and disease-specific case studies.

PHRM 6400. Human Physiology I. 4 hours.
Not open to students with credit in PHRM 3400.
Prerequisite: (BIOL 1104-1104L and CHEM 2410 and CHEM 2410L) or permission of department.
Physiology of the human body with emphasis on the central nervous system, autonomic nervous system and digestive system.

PHRM 6410. Pharmacology I. 4 hours.
Not open to students with credit in PHRM 4410.
Prerequisite: Permission of department.
Mechanisms of action of drugs in the human body. Specific drug classes that are covered include nonsteroidal antiinflammatory drugs, male and female reproductive agents, thyroid drugs, insulin and diabetes treatments, diuretics, ACTH, cholinergic, antihypertensives, hyperlipidemias, antianginals, cardiac glycosides, thrombolytics, and antiarrhythmics.

PHRM 6420. Pharmacology II. 4 hours.
Not open to students with credit in PHRM 4420.
Prerequisite: PHRM 6410 or permission of department.
Pharmacologic action, therapeutic application, and toxicology of drugs in current use, focusing on central nervous system and autonomic nervous system drugs.

PHRM 6470. Pathophysiology I. 4 hours.
Not open to students with credit in PHRM 3470.
Prerequisite: BIOL 1104-1104L and CHEM 2410 and CHEM 2410L.
Corequisite: PHRM 6400.

Mechanisms of human disease processes, including manifestation, mechanisms, diagnosis, treatment, prognosis. Emphasis is on cell injury, neurological, dermatological, oncological, gastrointestinal, visual, and auditory disorders.

PHRM 6480. Pathophysiology II. 4 hours.
Not open to students with credit in PHRM 3480.
Prerequisite: BIOL 1104-1104L and CHEM 2410 and CHEM 2410L.
Corequisite: PHRM 6500.
Mechanisms of human disease processes, including manifestation, mechanisms, diagnosis, treatment, prognosis. Emphasis is on inflammation, blood, endocrine, cardiovascular, pulmonary, and renal disorders.

PHRM 6500. Human Physiology II. 4 hours.
Not open to students with credit in PHRM 3410.
Prerequisite: Permission of department.
Human physiology of the cardiovascular, renal, endocrine, respiratory, immune, and reproductive systems, including selected topics in integrated physiological regulation. Directed literature studies in human physiology.

PHRM 6550. Essentials of Animals in Biomedical Research. 2 hours. 4 hours lab per week.
Prerequisite: Permission of department.
Humane methods of animal maintenance and experimentation; the testing methods which minimize animal distress; use of anesthetics, analgesics, and tranquilizers for commonly used lab species; methods for reporting deficiencies in animal care; laws pertaining to the use of animals in biomedical research.

PHRM 6750. Pharmacy and the United States Health Care System. 3 hours.
Not open to students with credit in PHRM 3750.
Prerequisite: Permission of department.
The social, economic, and political forces that shape the environment in which health care currently is being delivered in America and how this affects the practice of pharmacy.

PHRM(VPHY) 6910. Introductory Toxicology. 3 hours.
Basic toxicology principles, including dose-response relationships, principles of toxicity and safety evaluation, pharmacokinetics and metabolism of chemicals, basic mechanisms of cellular injury, factors influencing toxicity, carcinogenesis/mutagenesis, governmental regulations, and exposure and risk assessment.

PHRM 7000. Master's Research. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

PHRM 7080. Pharmaceutical Sciences Internship. 10 hours. Repeatable for maximum 20 hours credit.
Research experience in an appropriate industrial or government environment.

PHRM 7210. Special Topics in Pharmacy. 3-5 hours.
Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Specialized pharmaceutical systems, processes and techniques, assignments of current literature and student presentations.

PHRM 7220. Drug Development and Regulation. 3 hours.
Prerequisite: Permission of department.
Processes involved in drug discovery, development, and regulation, including methods of new drug characterization, preclinical and clinical testing, laboratory and manufacturing practice standards, government regulations applicable to the drug approval process for marketing and postmarketing surveillance.

PHRM 7230. Ethical Issues in Research. 2 hours.
Prerequisite: Permission of department.
Ethics of research in animals and human subjects, fraud, scientific misconduct, and conflicts of interest.

PHRM 7300. Master's Thesis. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

PHRM 8000. Pharmaceutical and Biomedical Sciences Research Survey. 1 hour.
Seminar survey of research activities of faculty in the Department of Pharmaceutical and Biomedical Sciences.

PHRM 8010. Biochemical Targets of Drug Design. 3 hours.
Prerequisite: Permission of department.
Rational design of drugs based on biochemical targets in humans and pathogenic organisms. Various methodology for the design of drugs, such as false-substrate, mechanism band, and suicide substrate will be presented.

PHRM 8020. Principles of Pharmaceutical and Biomedical Sciences. 3 hours.
This course will cover aspects of pharmaceutical and biomedical science necessary for all graduate students.

PHRM 8070. Computational Methods for Drug Design and Discovery. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Common theoretical approaches relevant to drug design and discovery, including applied aspects of computational chemistry, quantitating structure-activity relationships (QSAR) and computational molecular biology. Specific topics include modeling of small molecules, proteins, nucleic acids, carbohydrates, and drug receptors; QSAR and 3D-QSAR; and bioinformatics approaches.

PHRM 8080. Grantsmanship. 3 hours.
Prerequisite: Permission of department.
Organization and origination of research ideas and data into grants, manuscript, and other submissions.

PHRM 8100. Pharmaceutical Analysis I. 3 hours.
Prerequisite: Permission of department.
Separation, identification, and analysis of drugs by thin-layer, gas, and high performance liquid chromatography, supercritical fluid chromatography, and capillary electrophoresis.

PHRM 8110. Pharmaceutical Analysis II. 3 hours.
Prerequisite: Permission of department.
The separation, identification, and analysis of drugs and metabolites in biological samples.

PHRM 8120. Pharmaceutical Analysis III. 3 hours.
Prerequisite: Permission of department.
Identification and analysis of drugs and other biomolecules by mass spectrometry.

PHRM 8160. Chemistry of Synthetic Drugs. 2 hours.
Prerequisite: PHRM 4060/6060 and CHEM 8320.
New and established methods for synthetic preparation of organic medicinal agents.

PHRM 8170. Advanced Topics In Macromolecular Crystallography. 1 hour. Repeatable for maximum 5 hours credit.
Prerequisite: Permission of school.
This course will cover specific topics concerning the theory of macromolecular crystallographic methods as well as new developments in the field.

PHRM 8180. Carbohydrate and Nucleoside Chemistry. 3 hours.
Prerequisite: Permission of department.
Carbohydrate chemistry and its application to the synthesis of nucleosides and related classes of compounds.

PHRM 8200. Pharmaceutical and Biomedical Sciences Seminar. 1 hour. Repeatable for maximum 8 hours credit.
Research and new developments in pharmaceutical and biomedical sciences.

PHRM 8210. Advanced Topics in Pharmaceutics. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Methods of utilizing the literature relating to pharmaceutics and discussion of recent developments in the field.

PHRM 8220. Physical Pharmacy. 4 hours.
Prerequisite: Permission of department.
Physical concepts and methods as they apply to pharmaceutical problems.

PHRM 8230. Drug Delivery Systems. 4 hours.
Prerequisite: Permission of department.
The concepts, principles, technology, and assessment of drug delivery to the blood and target sites by various routes.

PHRM 8240. Technology in Industrial Pharmacy. 4 hours. 1 hour lecture and 9 hours lab per week.
Prerequisite: Permission of department.
Formation and production of powders, capsules, compressed tablets, coated tablets, liquids, and semisolids.

PHRM 8260. Pharmacokinetics. 4 hours.
Prerequisite: Permission of department.
The kinetics of drug absorption, distribution, and elimination with emphasis on the development and evaluation of mathematical models.

PHRM 8270. Contemporary Concepts in Pharmacokinetics. 3 hours.
Prerequisite: PHRM 8260.
Techniques of pharmacokinetic and pharmacodynamic modeling and data treatment.

PHRM 8290. Computer Applications in Pharmaceutical Sciences. 3-5 hours. Repeatable for maximum 5 hours credit. 2 hours lecture and 2-6 hours lab per week.
Applications of computers in pharmaceutical sciences.

PHRM 8300. Applied Pharmaceutical Biotechnology. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100.
Developments in the field of biotechnology that are applicable to the pharmaceutical industry.

PHRM 8420. Cardiovascular Pharmacology. 3 hours.
Prerequisite: Permission of department.

Mechanisms of action of drugs used in the treatment of cardiovascular disease states at the system, organ, and molecular level.

PHRM 8430. Advanced Neuropharmacology. 3 hours.
Prerequisite: PHRM 4420 or PHRM 6420 or permission of department.
Behavioral and neurochemical aspects of drug action in the central nervous system.

PHRM 8440. Chemotherapy of Microbial and Neoplastic Diseases. 3 hours.
Prerequisite: Permission of department.
Examination of the mechanism of action of drugs employed in the treatment of infectious diseases and cancer. Modern pharmacological approaches in the treatment of these disease states.

PHRM 8450. Coronary Heart Disease. 3 hours.
Prerequisite: Permission of department.
Pathophysiology of and therapeutic strategies for treatment of coronary heart disease, including lipid profiles, stress, alcohol, smoking and obesity as interactive risks in coronary artery disease. The vascular biology of arteries and the biochemistry and cell biology of atherogenesis are examined.

PHRM 8610. Social Behavioral Theory in Health Care. 3 hours.
Prerequisite: Permission of department.
Social behavioral theory and research methods used by health services researchers, focusing on determinants of health and illness, the interplay between values, technology, economics, and patient care.

PHRM 8620. Pharmacy Care Administration Seminar. 1 hour.
Current topics of pharmacy and health care services research.

PHRM 8630. Health Care Systems. 3 hours.
Prerequisite: Permission of department.
Health care policy and the research methods used by health services researchers; the complex environment in which health care goods and services are delivered to consumers; the political, economic, and social forces influencing the health care system.

PHRM 8640. Research Methods in Pharmacy Care Administration. 3 hours.
Prerequisite: Permission of department.
Research methodology, including formulation of research questions and research hypotheses, selection of the research design, sampling, internal and external validity, data collection, data analysis, results presentation and discussion.

PHRM 8650. Advanced Research Methods in Pharmacy Care Administration. 3 hours.
Prerequisite: PHRM 8640 and STAT 6210.
Advanced research methods in pharmaceutical and health care sciences employing a large claims data base. Course work includes design and execution of research hypotheses relating to medical outcomes, drug utilization review, and policy analysis. Methods include use of the Statistical Analysis System and mainframe control language.

PHRM 8660. Health Care Marketing. 3 hours.
Prerequisite: Permission of department.
Application of the marketing process to health care and exploration of how marketing theory and practice are applied in health care environments. Development and marketing of health care technology and consumer behavior issues, health beliefs, health promotion, and the role of patient education on behavior are explored.

PHRM 8670. Pharmacoeconomics and Health Care Technology Assessment. 3 hours.
Prerequisite: STAT 6220 and PHRM 8660.
The skills to design, conduct, analyze, and rate trials to evaluate health outcomes of various technologies or policies; theoretical models for health outcomes research integrated with pharmacoeconomics; the methodologic designs and statistical analyses commonly employed to evaluate various health technologies.

PHRM 8680. Pharmacoepidemiology. 3 hours.
Prerequisite: PHRM 8640.
Nature, purpose, and methods in pharmacoepidemiology and their place in pharmacy and health policy. The general concepts in epidemiology and pharmacoepidemiology such as study population, drug exposure, basic measurements, quality of measurements, designs, bias and confounding factors.

PHRM 8690. Health Outcomes. 3 hours.
Prerequisite: PHRM 8640.
Quality of life assessment: history, measurement, and their place in pharmacy and health policy. Application in addition to theory is addressed.

PHRM 8700. Advanced Therapeutics I. 4 hours.
Prerequisite: Permission of department.
Prerequisite or corequisite: Permission of department.
The basic science and clinical issues associated with the use of pharmacological agents with a special emphasis on the pathogenesis and pharmacological management of cardiovascular, respiratory, and renal disorders.

PHRM 8710. Advanced Therapeutics II. 4 hours.
Prerequisite: Permission of department.

The basic science and clinical issues associated with the pathogenesis and pharmacological management of major neurologic and psychiatric diseases suffered by humans.

PHRM(VPHY) 8910. Organ Systems Toxicology I. 3 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Mechanisms of injury of biological systems produced by chemical exposure. Adverse effects of chemicals on major bodily organs and organ systems including the blood, respiratory systems, nervous system, kidneys and the cardiovascular system.

PHRM(POUL)(VPHY) 8920. Organ Systems Toxicology II. 3 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Mechanisms of injury of biological systems produced by chemical exposure. Adverse effects of chemicals on major bodily organs and organ systems including the liver, carcinogenesis/mutagenesis, immune system, reproductive system, skin, and eyes.

PHRM(EHSC)(POUL)(VPHY) 8930. Chemical Toxicology. 3 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Chemical contamination of air, water, and food by major agricultural and industrial chemicals. Emphasis will be placed on sources of contamination, fate of chemicals in the environment, target species, health effects, chemical analyses, and contamination control.

PHRM(VPHY) 8940. Organ Systems Toxicology. 4 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Mechanisms of injury of biological systems produced by chemical exposure. Adverse effects of chemicals on major bodily organs and organ systems, including the blood, respiratory system, nervous system, kidneys, cardiovascular system, liver, immune system, reproductive system, skin, and eyes.

PHRM 9000. Doctoral Research. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

PHRM 9300. Doctoral Dissertation. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

The School of Social Work

Bonnie L. Yegidis, *Dean*
Larry G. Nackerud, *Graduate Coordinator,* 542-5470
(Tucker Hall)

The School of Social Work offers the MSW and the PhD degrees. The MSW is a professional degree that may be completed in two years (four semesters of full-time) study or in three or four years of part-time study. Admission may be obtained by persons holding bachelor's degrees in any field which includes a liberal arts education if potential for graduate professional education is demonstrated. Advanced standing may be awarded to selected applicants who are graduates of undergraduate social work programs accredited by the Council of Social Work Education. The program for applicants eligible for advanced standing is three semesters in length.

Graduate assistantships and federal traineeships are available in limited numbers. In addition, a few public and voluntary agencies offer stipends.

The program includes two field instruction experiences: the first is generalist and begins in the spring semester of full-time study. The second is the concentration area and occurs in the third and fourth semesters of full-time study. Students may select either a concentration in family centered social work practice, or community empowerment and program development.

The School of Social Work also offers the PhD degree, with specialization in the development of knowledge for social work practice. The program includes advanced study in theory, research methods, assessment of practice, internship, and the dissertation. Admission criteria include the MSW, professional experience, and a strong academic record.

The School of Social Work also co-sponsors the Institute for Nonprofit Organizations. The institute offers the MA degree in nonprofit organizations.

Social Work

(SOWK)(CHFD)ECHD 6010. Issues in Marriage and Family Therapy. 3 hours.
Prerequisite: Permission of school.
Disciplines and professional groups related to marriage and family therapy, including historical, ethical, and legal issues, and other topics relevant to the current practice of marriage and family therapy.

SOWK 6011. Social Welfare Policy and the Social Work Profession. 3 hours.
History of the social work profession and the structures, functions, philosophies, and policies of programs and services which are designed to ameliorate social problems. The process of recognizing and defining social problems and then developing legislation is analyzed.

SOWK 6022. Human Behavior in the Social Environment: Theoretical Perspectives. 3 hours.
Theories of human behavior which guide the practice of social work and provide the basis for assessment in social work practice. Theories such as the psychoanalytic, behavioral, ecological, and normative life stages are highlighted.

SOWK 6033. Direct Practice Methods. 3 hours.
Skill, knowledge, and values of generalist social work practice. Emphasis is placed on the strengths perspective and ecological system framework. Skill development areas include interviewing, communication, building relationships, and problem-solving.

SOWK 6044. Theory and Practice with Families and Groups. 3 hours.
Family and group dynamics in relation to social work practices with families and groups. Theory and practice are integrated and evaluated at various levels of practice.

SOWK 6055. Foundation Practicum and Seminar. 3 hours.
Prerequisite: (SOWK 6011 or SOWK 6022 or SOWK 6033) and SOWK 6044.
Generalist practicum and integrative seminar. Learning plans are developed and implemented together with field instructors in community social service agencies.

SOWK 6066. Foundation Research Methods. 3 hours.
Developing, testing, refining, and using empirical scientific knowledge for social work practice.

SOWK 6074. Theory and Practice With Organizations and Communities. 3 hours.
Organizational and community dynamics, leadership, and change practices within agencies, agency networks, communities, and community empowerment groups.

SOWK 6082. Cultural Diversity. 3 hours.
The impact on social work practice of diversities in age, ethnicity, race, religion, ability, gender, economic class, and sexual orientation.

SOWK 6104. Social Services with Mexican Clients. 2-3 hours. Repeatable for maximum 6 hours credit.
Direct exposure to, development of cultural competence with, and direct practice with clients in Mexico.

SOWK 6107. Special Topics: General Electives. 2-3 hours. Repeatable for maximum 9 hours credit.
Unique topical subjects in social work practice, theory, research, or policy.

SOWK 6112. Overview of Substance Abuse. 2-3 hours.
Overview of alcohol and other drug (AOD) use and the nature and extent of the problem, its complexity and strategies for intervention.

SOWK 6117. Social Work with Violent Families. 2-3 hours. Repeatable for maximum 6 hours credit.
Multi-systemic, community-wide approaches to protecting family members from domestic violence.

SOWK 6122. Grief and Loss: Social Work Perspectives. 2-3 hours.
Introduction to social work interventions with people experiencing grief and loss.

SOWK 6127. Social Work with Women. 2-3 hours.
Overview of the ideas, policies, and theoretical perspectives affecting women's normative development, roles, psychosocial, and mental health issues.

SOWK 6132. Social Work with Abusing and Neglecting Families. 2-3 hours.
Critical examination of current knowledge about causality and interventions to prevent or remedy child abuse and neglect.

SOWK 6133. Legislative Advocacy. 2-3 hours.
Approaches to legislative advocacy to redress social, economic, and political injustices.

SOWK 6142. Social Work with Older Adults. 2-3 hours.
Exploration of human behavior, practice, research, and policies regarding interventions with diverse and vulnerable adults.

SOWK 6152. Immigration and Social Work. 2-3 hours.
Overview of patterns of immigration, immigration policies, community adjustments, and social work practice with immigrant populations.

(SOWK)MNPO 6162. Ethics and Professional Practice. 3 hours.
The basic theories and principles of ethics and their applications to a variety of professional issues in nonprofit organizations.

SOWK 6908. Independent Social Work Research. 1-5 hours. Repeatable for maximum 5 hours credit.
Prerequisite: Permission of school.
Readings course for independent research into the human services under the direction of a faculty member.

SOWK 7000. Master's Research. 1-5 hours. Repeatable for maximum 5 hours credit.
Prerequisite: Permission of school.
Research while enrolled for a master's degree under the direction of faculty members.

SOWK 7055. Concentration Practicum. 1-5 hours. Repeatable for maximum 15 hours credit.
Prerequisite: SOWK 6055 or permission of school.
Two semesters of practical field experience integrating knowledge of human behavior and interventive practice models. A final project demonstrates advanced competence in assessment, practice, diversity, and research.

SOWK 7106. Evaluation of Community and Institutional Practices. 3 hours.
Not open to students with credit in SOWK 7166.
Prerequisite: SOWK 6044 or SOWK 7033 or permission of school.
Models of evaluation of community empowerment groups and institutional development programs. Skills are developed in the design and application of empirically-based outcome evaluations.

SOWK 7113. Supervision. 2-3 hours.
Prerequisite: SOWK 6033.
Advanced issues and topics in supervision and administration of social services from a multi-theory and multi-systems perspective.

SOWK 7123. Program Design and Development. 2-3 hours.
Prerequisite: SOWK 6033.
Development of skills in program development and grant writing. Specific content is focused on development of proposals for human service agencies.

SOWK 7132. Social Work with Abusing and Neglecting Families. 3 hours.
A critical examination of current knowledge about causality and interventions to prevent or remedy child abuse and neglect. Attention to ethical and cultural issues in defining and intervening with abusive and neglectful families. Legal implications of social policy and social work practice for prevention and remediation with families are emphasized.

SOWK 7143. Organizing Community Groups. 2-3 hours.
Prerequisite: SOWK 6033.
Forming, organizing, and empowering community groups and coalitions for social action and change.

SOWK 7153. Community Assessment and Empowerment Practices. 3 hours.
Not open to students with credit in SOWK 7033.
Prerequisite: SOWK 6033 or SOWK 6044 or permission of school.
Assessment and intervention with groups, organizations, and communities. Techniques of organizational and community assessment are developed, followed by models of planned intervention.

SOWK 7203. Family-Centered Assessment and Practice with Individuals. 3 hours.
Not open to students with credit in SOWK 7023.
Prerequisite: SOWK 6055 or SOWK 6044 or permission of school.
Assessment methods applicable to social work practice with individuals within the context of the family system.

SOWK 7206. Evaluation of Family-Centered Social Work Intervention. 3 hours.
Not open to students with credit in SOWK 7066.
Prerequisite: SOWK 7023 or permission of school.
Evaluation of direct social work practices with individuals, couples, families, and small groups, utilizing social science research methodologies.

SOWK 7213. School Social Work. 2-3 hours.
Social work practice and policies with children and their families in elementary and secondary school settings.

SOWK 7222. Assessment and Psychopathology. 2-3 hours.
Prerequisite: Permission of school.
Assessment of individuals in the context of mental disorders. The evolution and assumptions of the DSM systems are examined in terms of strengths and limitations.

SOWK 7223. Social Work Treatment with Groups. 2-3 hours.
Not open to students with credit in SOWK 7183.
Prerequisite: SOWK 6033.
Direct theory-based practice methods with groups. Emphasis is placed on models which are effective with persons at risk because of race, age, ethnicity, ability, gender, or sexual orientation.

SOWK 7232. Family Dynamics. 2-3 hours.
Prerequisite: SOWK 6033.
Family structure and dynamics through various stages in the developmental cycle, in response to “normal hazards” of everyday living and circumstances. The family is seen as a matrix for individual development.

SOWK 7233. Behavioral Methods in Social Work Practice. 2-3 hours.
Empirically supported, behavioral interventions for a variety of psychosocial problems. Alcohol and drug abuse, chronic mental illness, affective disorders, anxiety disorders, child and adolescent conduct and autistic disorders are highlighted.

SOWK 7243. Family Interventions. 2-3 hours.
Prerequisite: SOWK 6033.
Advanced social work practice with dysfunctional family systems using a variety of assessment and intervention strategies.

SOWK 7253. Crisis Interventions. 2-3 hours.
Prerequisite: SOWK 6033.
Knowledge and practice skill development in working with individuals and groups in crisis. Models of intervention known to enhance stabilization will be assessed and evaluated.

SOWK 7263. Social Work in Health Care Settings. 2-3 hours.
Prerequisite: SOWK 6033.
Social work knowledge and skills for direct practice with individuals and families in a variety of acute care and long-term medical settings.

SOWK 7273. Treatment Strategies with Substance Abusing Families. 2-3 hours.
Prerequisite: SOWK 6033.
Advanced social work treatment strategies with substance abusing families.

SOWK 7300. Master's Thesis. 1-5 hours. Repeatable for maximum 5 hours credit.
Prerequisite: Permission of school.

Thesis writing under the direction of the major professor.

SOWK 7327. Topics in Aging. 2-3 hours. Repeatable for maximum 10 hours credit.
Human behavior, practice, research, and policies regarding interventions with abused and vulnerable adults. Families with older adult members are also highlighted.

SOWK 7337. Topics in Community Practice. 2-3 hours. Repeatable for maximum 10 hours credit.
Human behavior, practice, research, and policies regarding intervention at the community level. Various models of community practice are included.

SOWK 7347. Topics in Family and Child Welfare. 2-3 hours. Repeatable for maximum 10 hours credit.
Human behavior, practice, research, and policies regarding interventions with vulnerable children and their families. A variety of children's, school, parental, and related adult topics are highlighted.

SOWK 7377. Topics in Program Development. 2-3 hours. Repeatable for maximum 10 hours credit.
Human behavior, practice, research, and policies regarding program design and development in the delivery of human services. Capabilities for organizing to develop programs are highlighted.

SOWK 7387. Topics in Social Problem Intervention. 2-3 hours. Repeatable for maximum 10 hours credit.
Human behavior, practice, research, and policies regarding treatment or preventive interventions which are designed to address special social problems. Examples include substance abuse, family violence, mental health, physical health, and corrections.

SOWK 7397. Topics in Social Justice. 2-3 hours. Repeatable for maximum 10 hours credit.
Human behavior, practice, research, and policies which affect organized movements for social justice in the United States of America and developing countries. Perspectives include feminist, racial and ethnic, sexual orientation, age, disability, and social development.

SOWK 7411. Advanced Policy Analysis. 3 hours.
Not open to students with credit in SOWK 7011.
Prerequisite: SOWK 6011 or permission of school.
Social welfare policy analysis as a field of study. Concepts and tools of analysis are examined in a variety of social problem and related institutional fields.

SOWK 7417. Issues in Professional Employment. 1-3 hours.
The process of negotiating the job market. Analysis of personal professional market value is performed in relation to values among employers. Attributes of employers and potential colleagues in preferred settings are discussed.

SOWK 8012. Theories of Social Work Practice I. 3 hours.
Critical analysis of social work practice theories related to individuals, families, and small groups, including a review of the empirical evidence pertaining to the validity of each approach. The philosophy of science and other assumptions relating to each theory will be examined, as will potential ethical considerations.

SOWK 8022. Theories of Social Work Practice II. 3 hours.
Critical analysis of social work practice theories related to organizations and communities, including a review of the empirical evidence pertaining to the validity of each approach. The philosophy of science and other assumptions relating to each theory will be examined, as will potential ethical considerations.

SOWK 8116. Research Methods I. 3 hours.
A survey of the major methodologies of quantitative scientific research derived from nomothetic approaches, including descriptive, correlational, quasi-experimental and experimental studies. The philosophy of science and other assumptions related to these approaches will be examined, as will ethical considerations.

SOWK 8126. Research Methods II. 3 hours.
Prerequisite: SOWK 8116 and (STAT 6210 or ERSH 6300).
A survey of the major approaches to conducting clinical and program evaluations of the outcomes of social work practice, including nomothetic and single system research designs. Critical analysis of published examples of social work evaluation studies covering the range of practice, micro through macro, will be included, as well as the ethical considerations involved in each research design.

SOWK 8146. Assessment and Measurement in Social Work Research. 3 hours.
Prerequisite: STAT 6210 or ERSH 6300 or PSYC 6410.
A review of the evidence-based approaches to the reliable and valid measurement of client problems, strengths, and situations, across the range of practice, for research purposes. Issues pertaining to reliability and validity of measurement, and the procedures involved in developing a new measure are included, as

well as ethical considerations related to assessment and measurement.

SOWK 8156. Software for Social Work Research. 3 hours.
Prerequisite: (STAT 6210 and STAT 6220) or (ERSH 6300 and ERSH 8310).
A review of the latest version of the Statistical Package for the Social Sciences (SPSS), including creating a database, data entry and checking, the conduct and analysis of descriptive, correlational, and inferential statistics used in research on social work practice, and the preparation of research reports involving statistical analysis.

SOWK 8166. Qualitative Research Methods in Social Work. 3 hours.
Theories and methodologies of qualitative social work research, including ethnography, case study, interview, document analysis, and life history studies. The relationships between qualitative and other research traditions are examined. Techniques for data collection, analysis, and presentation are studied.

SOWK 8217. Philosophy of Science and Theory Development. 3 hours.
Issues in the philosophy of social science and approaches to the construction, development, and refinement theories undergirding the field of social work.

SOWK 8227. Social Work Education. 3 hours.
Overview of social work education, including the structure of the educational continuum, foundation and concentration courses, and accreditation standards and issues. Preparation for effective teaching within social work degree programs, including syllabi development, assessment of student learning, instructional methods, grading, and ethical issues.

SOWK 8237. Ethical Issues in Social Work Practice. 3 hours.
Basic theories and principles of ethics and their application to a variety of professional issues in the delivery of human services. Attention to examination of major theories of ethics, their application in the analysis of dilemmas in practice, and research approaches for further study of ethical problems.

SOWK 8240. Dissertation Prospectus. 3 hours.
Prerequisite: Admission to Doctoral Candidacy.
Directed study leading towards the preparation and submission of the dissertation prospectus.

SOWK 8306. Research Practicum. 2-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: SOWK 8116.
Application of research methods to social work practice, under faculty supervision. Experiences cover the conceptualization of problems through data collection, analysis, interpretation, and writing.

SOWK 8315. Social Work Education Practicum. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of school.
Practical instructional roles in classroom and field teaching under the guidance of a faculty mentor. Designed to give students experience in all aspects of teaching in higher education, such as constructing course syllabi, leading large and small group classroom instruction activities, and monitoring and evaluating student accomplishment of course objectives.

SOWK 8417. Current Issues in Social Work Research. 1 hour.
A review of contemporary research issues and projects, presented by various social work faculty. Most presentations will involve a review of particular social or interpersonal problems, a statement of one or more research questions or hypotheses, investigatory methods, analysis of data, results, and a discussion of potential applications to practice. Provides the first year Ph.D. student with exposure to faculty backgrounds and research interests, and to an array of approaches to scientific inquiry.

SOWK 8428. Directed Research on Social Work Practice. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of school.
Research on topics and issues relevant to social work practice under the guidance of a faculty member.

SOWK 9000. Doctoral Research. 1-6 hours. Repeatable for maximum 24 hours credit.
Prerequisite: Permission of school.
Research while enrolled for a doctoral degree under the direction of faculty members.

SOWK 9105. Social Work Research Internship. 3-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of school.
Practice research internship to apply research methods to the study of social work practice. Students develop and test social work interventions based on current theories and practice.

SOWK 9300. Doctoral Dissertation. 1-9 hours. Repeatable for maximum 18 hours credit.
Prerequisite: Permission of school.
Dissertation writing under the direction of the major professor.

Master of Nonprofit Organizations

MNPO 6023. Human Behavior in Nonprofit Organizations. 3 hours.
Behavior and interactions of people in nonprofit organizations. The antecendents and results of conduct, structures, relationships, and work processes, including their impacts on organizational effectiveness and service delivery. Supervison, staff development, and change in nonprofit organizations are addressed.

MNPO 6060. Fund Raising and Development for Nonprofit Organizations. 3 hours.
Examination of the philosophy and processes of supporting nonprofit organizations through financial and other contributions. Exploration of the field of fund raising and development to obtain financial resources, including gift planning, annual campaigns, capital and endowment campaigns, direct solicitation, and others. Management of volunteers, preparing and analyzing cash flow statements and financial statements for nonprofit organizations.

MNPO(SOWK) 6162. Ethics and Professional Practice. 3 hours.
The basic theories and principles of ethics and their applications to a variety of professional issues in nonprofit organizations.

MNPO 7000. Master's Research. 1-6 hours. Repeatable for maximum 6 hours credit.
Research while enrolled for a master's degree under supervision of a faculty member.

MNPO 7055. Internship in Nonprofit Organizations. 3 hours. Repeatable for maximum 6 hours credit.
Not open to students with credit in MNPO 6055.
The internship allows students to integrate their academic learning with practical applications and skill development through supervised work and research in nonprofit organizations.

MNPO 7123. Theory and Management of Nonprofit Organizations. 3 hours.
An introduction to the field of nonprofit organizations, emphasizing the key theories useful for understanding them and the basic skills of leadership and management needed to make them effective. Attention is given to strategic planning, resource acquisition, accounting for use of resources, and developing human resources.

College of Veterinary Medicine

Keith W. Prasse, *Dean*
(Veterinary Medicine Building)

The College of Veterinary Medicine offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees. The major areas of concentration include anatomy (MS only), medical microbiology, parasitology, pathology, pharmacology, physiology, and toxicology. A program is offered leading to the professional degree of Master of Avian Medicine for veterinary graduates desiring specialized training in the diagnosis, treatment, and prevention of poultry diseases. In many cases graduate programs are open both to veterinary graduates and to those with bachelor's degrees in appropriate areas.

Internship and residency programs for veterinary graduates are offered in small animal medicine, large animal medicine, surgery, neurology, ophthalmology, theriogenology, and radiology. Residents have the opportunity to work toward the MS or PhD degree in a basic science along with their clinical science training.

Details concerning specific admission or program requirements and options should be discussed with the appropriate department. General information regarding degree programs available in the College of Veterinary Medicine may be obtained from the Office of the Associate Dean for Research and Graduate Affairs, College of Veterinary Medicine.

Avian Medicine

Stanley H. Kleven, *Head*
Jean E. Sander, *Graduate Coordinator,*
542-5058
(Poultry Diagnostic and Research Center)

The Master of Avian Medicine is designed to provide veterinarians with specialized training in the diagnosis, treatment and prevention of poultry diseases. The degree is open to students who hold the Doctor of Veterinary Medicine degree.

AVMD 6050. Avian Diseases. 3 hours.
Prerequisite: Permission of department.
The signs of specific poultry diseases, their causes, and contributing management factors.

AVMD 6100. Clinical Avian Medicine. 3 hours.
Prerequisite: Permission of department.
Through study of case material, students learn to integrate laboratory test results into an accurate diagnosis. Appropriate treatment and prevention plans will be formulated.

AVMD 6120. Avian Medicine Clinical Rounds. 1 hour. Repeatable for maximum 3 hours credit. 1 hour lab per week.
Prerequisite: Permission of department.
Faculty and students will discuss in detail clinical cases representing current avian disease problems.

AVMD 6140. Avian Necropsy. 1 hour. 3 hours lab per week.
Prerequisite: Permission of department.
Necropsy procedures applied to diagnosis of avian diseases. Use of necropsy case material to correlate function with structure; appropriate therapeutic and prophylactic measures are discussed and recommendations for clients determined. Problem-oriented medical records maintained for discussion and audit.

AVMD 6160. Poultry Disease and Management Interaction. 3 hours. 9 hours lab per week.
Prerequisite: Permission of department.
Interactions between current commercial management practices relative to their effect on poultry diseases. Actual field experiences are used in the identification of health problems and recommendations for improving flock health.

AVMD 6210. Avian Medicine Externship. 7 hours. 40 hours lab per week.
Prerequisite: Permission of department.
Independent off-campus experience working as a veterinarian in commercial poultry companies, allied industries, or diagnostic laboratories.

AVMD 6800. Avian Pharmacology and Toxicology. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.

Chemistry, mechanisms of action, legal dosages, residue concerns, and analysis of antibiotics, minerals, vitamins, anthelmintics, mycotoxins, and other naturally-occurring toxicants impacting commercial poultry production.

AVMD 7060. Avian Diagnostic Microbiology. 3-4 hours.
Prerequisite: Permission of department.
Intense practical experience in acquisition, handling, and processing of clinical microbiological specimens. Areas covered include processing techniques, culture techniques, media selection, screening methods, interpretation of cultures, traditional and rapid identification methods, antimicrobial sensitivity testing, special recovery and enrichment techniques, hatchery microbiology, HACCP and processing.

AVMD 7060L. Avian Diagnostic Microbiology Laboratory. 1 hour. 3-4 hours lab per week.
Prerequisite: Permission of department.
Corequisite: AVMD 7060.
Laboratory to be taken in conjunction with Avian Diagnostic Microbiology. The laboratory will apply techniques discussed in lectures.

AVMD 8050. Avian Virus Diseases. 3 hours.
Prerequisite: Permission of department.
The serological and virological methods used to isolate and identify avian viruses of economic importance. Cell culture systems are prepared and infected with different viruses to observe their effect. Specific projects are undertaken to familiarize the student with current virological techniques.

AVMD 8050L. Avian Virus Diseases Laboratory. 1 hour. 1-4 hours lab per week.
Prerequisite: AVMD 8050 or permission of department.
Prerequisite or corequisite: AVMD 8050.
Laboratory to be taken in conjunction with Avian Virus Diseases. The laboratory will apply techniques discussed in lecture to identify viruses of importance to poultry.

AVMD 8110. Problems in Poultry Diseases and Parasites. 3 hours. 9 hours lab per week.
Prerequisite: Permission of department.
Students work intensively on approved problems in the field of poultry health after selection of the specialized area with the appropriate staff member.

AVMD 8150. Avian Medicine Seminar. 1 hour. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Presentation and discussion of current diagnostic cases and research activities in the area of avian medicine.

(AVMD)VPAT 8220. Avian Histopathology. 3 hours. 9 hours lab per week.
Prerequisite: Permission of department.
Detailed microscopic studies will be made of avian tissues and the effects of specific diseases and their processes on them. A working knowledge of tissue processing and differential staining will be included.

Large Animal Medicine

James Neil Moore, *Head and Graduate Coordinator,* 542-3325
(Veterinary Medicine Building)

LAMS 5640/7640. Large Animal Residency IV. 5-15 hours. Repeatable for maximum 45 hours credit.
Undergraduate prerequisite: DVM degree and permission of department.
Graduate prerequisite or corequisite: LAMS 5630/7630 and permission of department.
This course provides clinical training for graduate veterinarians in the fourth year of a large animal residency in animal medicine, surgery, theriogenology, or anesthesiology.

LAMS 6100. Clinical Food Animal Medicine. 4 hours. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Through study of case material, students learn to integrate clinical and laboratory findings into an accurate diagnosis. Appropriate treatment and prevention plans will be formulated.

LAMS 6150. Problems and Current Issues in Food Animal Practice. 1 hour.
Prerequisite: Permission of department.
An overview of problems and current issues encountered in food animal practice, including time management, communications, client interaction, personnel management, conflict management, contracts, value-based assessment, team working, and process management.

LAMS 7500. Large Animal Internship. 10 hours. Repeatable for maximum 30 hours credit. 40 hours lab per week.
Not open to students with credit in LAMS 5500.
Prerequisite: DVM degree and permission of department.
Clinical training for the graduate veterinarian desiring in-depth knowledge and skills relative to the diagnosis and treatment of diseases affecting food animals and horses.

LAMS 7610. Large Animal Residency I. 5-17 hours. Repeatable for maximum 51 hours credit.
Prerequisite: DVM degree and permission of department.
This course provides clinical training during year one of a residency for graduate veterinarians desiring to specialize in large animal medicine, surgery, theriogenology, or anesthesiology.

LAMS 7620. Large Animal Residency II. 5-17 hours. Repeatable for maximum 51 hours credit.
Prerequisite: DVM degree and permission of department.
This course provides clinical training during year two of a residency for graduate veterinarians in large animal medicine, surgery, theriogenology, or anesthesiology.

LAMS 7630. Large Animal Residency III. 5-17 hours. Repeatable for maximum 51 hours credit.
Prerequisite: LAMS 7620 and permission of department.
This course provides clinical training during year three of a residency for graduate veterinarians in large animal medicine, surgery, theriogenology, or anesthesiology.

Medical Microbiology and Parasitology

Frederick D. Quinn, *Head*
Susan Little, *Graduate Coordinator,* 542-8447
(Veterinary Medicine Building)

Graduate work is offered in medical microbiology and parasitology leading to the MS and PhD degrees. Areas of specialization include biology of pathogenic microorganisms; immunology; animal virology; infectious diseases of mammals, avian, or fish; molecular biology, chemotherapy, immunology of parasitic protozoa and helminths as well as various aspects of wildlife diseases. An MS degree is also offered in an epidemiology specialization. Two types of students are accepted for graduate training: those with BS or MS degrees and those with DVM degrees.

Instruction is coordinated with course offerings in departments of the College of Arts and Sciences and the College of Agricultural and Environmental Sciences. The statistics and computer science departments are involved in the epidemiology program of study. Suitable courses in these departments are included in students' programs of study. Instruction in infectious diseases is coordinated with work in other departments within the College of Veterinary Medicine, the Poultry Diagnostic Research Center, and regional/federal research facilities.

Medical Microbiology

MMIB 4100/6100-4100L/6100L. Medical Immunology. 3 hours. 3 hours lecture and 3 hours lab per week.
Not open to students with credit in CBIO(MIBO) 4100/6100.
Undergraduate prerequisite: MIBO 3500 and BCMB (BIOL)(CHEM) 3100.
The mechanism of the immune response, host resistance to infection, serologic testing methods, and in vitro cellular testing procedures.

MMIB 4220/6220. Pathogenic Bacteriology. 3 hours.
The morphological, physiological, and pathogenic mechanisms of the important pathogenic bacterial agents; their relation to health and disease.

MMIB 4390/6390-4390L/6390L. Clinical Diagnostic Microbiology. 4 hours. 3 hours lecture and 4 hours lab per week.
Undergraduate prerequisite: MMIB 4220/6220.
The application of basic diagnostic problems associated with the recovery of disease organisms from clinical material. Methodology and problems involved in laboratory isolation and identification. Methods will also include molecular and automated applications.

MMIB 4450/6450. Molecular Bacteriology. 3 hours.
Not open to students with credit in MIBO 4800L/6800L.
Undergraduate prerequisite: MIBO 3500.
Techniques involved in identifying bacterial genes and discerning their function. The general principles behind cloning, nucleic acid hybridizations, and PCR. Issues concerning scientific integrity and patent issues.

MMIB 4500/6500-4500L/6500L. Virology. 3 hours. 3 hours lecture and 3 hours lab per week.
Undergraduate prerequisite: [MIBO 3500 and BCMB (BIOL)(CHEM) 3100] or permission of department.
The basic principles and concepts of virology. The major emphasis will be on vertebrate viruses. Subjects covered in this course include classification, replication, diagnosis, quantification, pathogenesis, epidemiology, and viral neoplasia.

MMIB 7000. Master's Research. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

MMIB 7300. Master's Thesis. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

(MMIB)VPAT 8150. Virology and Viral Pathogenesis. 3 hours.
Prerequisite: Permission of department.
Introductory virology includes viral structure, replication, genetics, and immunity. The mechanism(s) by which viruses enter, spread, and cause diseases in humans and animals. Virus-cell interactions include structural and functional alterations of hosts after virus infection and viral components responsible for these alterations.

MMIB 8160. Seminar in Medical Microbiology. 1 hour. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Semi-formal meetings for discussion of research and new developments in the field. Attendance is required of all Medical Microbiology graduate students.

MMIB(MIBO) 8200. Pathogenic and Molecular Microbiology. 5 hours.
Prerequisite: MMIB 4220/6220 and BCMB 4020/6020.
Medical pathogens emphasizing molecular techniques.

MMIB 8210. Experimental Procedures in Microbial Pathogenesis. 4 hours. 2 hours lecture and 6 hours lab per week.
Prerequisite: BCMB 8020 or permission of department.
Experimental procedures for the study of microbial virulence mechanisms. Basic laboratory techniques involved in the identification, isolation, and characterization of molecular factors responsible for microbial survival and virulence within a host.

MMIB(MIBO) 8230. Special Topics in Microbial Pathogenesis. 2 hours. Repeatable for maximum 4 hours credit.
Presentation and discussion of published research and new developments in microbial pathogenesis.

MMIB 8300. Advanced Immunology II. 3 hours.
Prerequisite: Permission of department.
Molecular immunology of signal transduction; T-cell, B-cell and NK cell regulation by MHC class I and II antigens; mechanisms of apoptosis; peptide processing and presentation. Lectures presented from recent research literature.

MMIB 8350. Principles and Research Applications of Flow Cytometry. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Theory and research applications of flow cytometry. Flow cytometry as it relates to immunophenotyping, cell cycle analysis, determination of cellular pathology of apoptosis as well as simultaneous four color analysis will be covered. Students will become independent regarding instrumentation, collection of data, analysis, etc. Additionally, students will be expected to carry out independent laboratory projects as well as participate in laboratory assignments.

MMIB 8500. Animal Virology. 3 hours.
Prerequisite: MMIB 4500/6500-4500L/6500L.
Virus/cell interactions, with emphasis on molecular and genetic aspects of disease or tumor production by animal viruses. The use of molecular techniques in the diagnosis, epidemiology, and pathogenesis of viral diseases will be addressed using current literature as the basis for discussion.

MMIB 8900. Problems in Medical Microbiology. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Intensive study, under the direction of staff members, on approved problems in medical microbiology.

MMIB 9000. Doctoral Research. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

MMIB 9300. Doctoral Dissertation. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Parasitology

PARA 7000. Master's Research. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

PARA 7300. Master's Thesis. 1-15 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

PARA 8030. Helminthology. 3 hours. 1 hour lecture and 8 hours lab per week.
Prerequisite: Permission of department.
The morphology, life histories, classification, and parasitic relationship of the helminths. Emphasis is placed on recent advances in helminthology research.

PARA 8050. Problems in Parasitology. 1-4 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Parasitic diseases of birds and mammals. Nature of the studies determined by the student's major field of interest.

PARA 8060L. Techniques in Experimental Parasitology. 4 hours. 8 hours lab per week.
Prerequisite: Permission of department.
Techniques necessary for in vivo and/or in vitro cultivation and maintenance of the life cycle of selected helminth, arthropod, and protozoan parasites will be employed.

PARA 8080L. Advanced Techniques in Molecular Parasitology. 3 hours. 6 hours lab per week.
Current techniques in molecular parasitology. Emphasis is placed on procedures for genomic analysis, rapid isolation and characterization of parasite molecules, and the detection and identification of parasites in host and vector.

PARA 8090-8090L. Parasitic Protozoa. 3.5 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
Current topics in the morphology, life histories, classification, and host/parasite interactions of protozoan parasites of man and lower animals.

PARA 8250. Special Topics in Parasitology. 1 hour. Repeatable for maximum 4 hours credit.
Published research and new developments in the study of parasites, their hosts and vectors.

(PARA)FORS 8500-8500L. Diseases of Wildlife I. 5 hours. 3 hours lecture and 6 hours lab per week.
Prerequisite: Permission of school.
Prerequisite or corequisite: FORS(PARA) 8510-8510L.
Fundamental causes of disease-induced morbidity and mortality among free-ranging wildlife populations. Etiology, pathogenesis, clinical signs, lesions, epidemiology, diagnosis, and management significance of diseases produced by viral and microbial pathogens.

(PARA)FORS 8510-8510L. Diseases of Wildlife II. 5 hours. 3 hours lecture and 6 hours lab per week.
Prerequisite: Permission of school.
Prerequisite or corequisite: FORS(PARA) 8500-8500L.
Fundamental causes of disease-induced morbidity and mortality among free-ranging wildlife populations. Emphasis is on the etiology, pathogenesis, clinical signs, lesions, epidemiology, diagnosis, and management significance of diseases of parasitic, toxicologic, or miscellaneous etiologies.

(PARA)CBIO(POUL) 8560. Seminar in Parasitology. 1 hour. Repeatable for maximum 3 hours credit. 1 hour lab per week.
Weekly discussion of parasitological topics.

PARA 8570. Seminar in Parasitology. 1 hour. Repeatable for maximum 6 hours credit.
Weekly meeting devoted to discussion of parasitologic subjects.

PARA 8580. Current Topics in Wildlife Health. 1 hour. Repeatable for maximum 5 hours credit. 2 hours lab per week.
Prerequisite: Permission of department.
Ongoing disease investigations, research, and wildlife health issues of national interest will be reviewed and discussed in a bi-weekly review of SCWDS activities. Students will participate in the discussion and may be asked to report further information to the group at the next session.

PARA 9000. Doctoral Research. 1-10 hours. Repeatable for maximum 45 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

PARA 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Pathology

Barry G. Harmon, *Head*
Jaroslava Halper, *Graduate Coordinator,*
542-5830
(Veterinary Medicine Building)

Graduate study leading to the MS or PhD degrees in veterinary pathology with emphasis in either anatomic or clinical pathology is offered by the department. Dissertation opportunities exist in the areas of growth factors, leukocyte pathobiology, infectious diseases, virology, wound healing, cellular immuno-pathobiology, wildlife diseases, and avian pathology including diseases of exotic species.

Applicants for graduate study are accepted to begin preferably in the fall semester. Prospective students usually have the DVM degree.

For a description of the MS and PhD interdisciplinary program in toxicology, see the section in this bulletin entitled, "General Degrees: Interdisciplinary Program."

VPAT)BIOL(CBIO) 5040/7040. Electron Microscopy. 3 hours.
Undergraduate prerequisite: [(CHEM 1212 and CHEM 1212L) or (CHEM 1412 and CHEM 1412L)] and PHYS 1112-1112L.
Instrument theory and theory of specimen preparation for both transmission and scanning electron microscopy. Fundamentals of X-ray microanalysis, image processing, and image analysis.

VPAT 7000. Master's Research. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

VPAT 7010. Necropsy Practicum. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Necropsy diagnosis of diseases of animals via gross and microscopic examination of tissues.

VPAT 7020. Biopsy Practicum. 1-3 hours. Repeatable for maximum 6 hours credit.
The diagnosis of diseases of animals by biopsy techniques. Studies are made of microscopic alterations of tissue submitted for antemortem diagnosis.

VPAT 7030. Cytology Practicum. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
The diagnosis of diseases of animals by cytologic techniques. Studies are made of cytologic preparations prepared from fluids and tissues submitted for antemortem diagnosis.

VPAT 7200-7200L. General Animal Pathology. 3.7 hours. 3 hours lecture and 1 hour lab per week.
Prerequisite: Permission of department.
The reaction of the body to disease processes, specifically disturbances of circulation, cell injury, inflammation, and disturbances of growth. Recognizing lesions grossly and microscopically, determining the pathogenesis of the lesions, and making lesion and disease diagnoses.

VPAT 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

VPAT 8000. Pathology Rounds. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
The presentation of complete case studies in weekly clinical pathology and histopathology rounds.

VPAT 8020. Cellular Pathology. 4 hours.
Prerequisite: Permission of department.
The response of the body to disease. Fine structural and molecular changes; includes mechanisms of cellular injury, carcinogenesis, and mechanisms of neoplasia and the inflammatory process.

VPAT 8050. Problems in Veterinary Pathology. 2-5 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
Disease problems of both birds and mammals. The nature of the studies will be determined by the student's major field of interest.

VPAT 8070-8070L. Veterinary Hematology. 3 hours. 2 hours lecture and 3 hours lab per week.
The morphology, physiology and pathology of the blood and blood-forming tissues. The laboratory will emphasize the morphology of normal and abnormal blood and bone marrow of domestic animals.

VPAT 8100. Microscopic Pathology. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
The microscopic features of diseases of domestic animals with emphasis on writing lesion descriptions and diagnosis.

VPAT 8120. Seminars in Laboratory Clinical Biochemistry. 1-3 hours.
Prerequisite: Permission of department.
Test methodology with brief reviews of related pathophysiologic mechanisms, clinical applications, and species differences. Principles of instrumentation, quality control, methodology, and interpretation of specific tests for diagnosis of animal diseases, e.g., enzymology assays, specific tests related to hepatic function and renal function, protein analysis, and endocrine related assays.

VPAT 8130. Diagnostic Oncology. 3 hours. 6 hours lab per week.
Prerequisite: VPAT 8100 or permission of department.
The microscopic features of neoplasms of domestic animals. The identification and characterization of the various tumors.

VPAT 8140. Seminar in Veterinary Pathology. 1-2 hours. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
The review and discussion of basic problems and diseases currently or potentially important in the field of veterinary medicine.

VPAT(MMIB) 8150. Virology and Viral Pathogenesis. 3 hours.
Prerequisite: Permission of department.
Introductory virology includes viral structure, replication, genetics, and immunity. The mechanism(s) by which viruses enter, spread, and cause diseases in humans and animals. Virus-cell interactions include structural and functional alterations of hosts after virus infection and viral components responsible for these alterations.

VPAT(AVMD) 8220. Avian Histopathology. 3 hours. 9 hours lab per week.
Prerequisite: Permission of department.
Detailed microscopic studies will be made of avian tissues and the effects of specific diseases and their processes on them. A working knowledge of tissue processing and differential staining will be included.

VPAT 8320. Pathology of Laboratory Animals. 3 hours.
Prerequisite: Permission of department.
The etiology, tissue alterations, both macroscopic and microscopic, of diseases of the common laboratory animals. Biological profile of each major species of laboratory animals.

VPAT 9000. Doctoral Research. 1-10 hours. Repeatable for maximum 40 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

VPAT 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Physiology and Pharmacology

Thomas F. Murray, *Head*
Royal A. McGraw., *Graduate Coordinator,*
542-0661
(Veterinary Medicine Building)

The Department of Physiology and Pharmacology offers MS and PhD degrees in physiology and pharmacology. Programs of study encompass the disciplines of physiology, pharmacology, and toxicology. Opportunities exist to concentrate on molecular biology, basic mechanisms of physiologic and pharmacologic processes, specific organ systems, or clinical problems. Graduates of these programs are employed by universities, regulatory agencies, and a variety of pharmaceutical or biotech companies.

Candidates for the MS or PhD degrees must have a baccalaureate or a Doctor of Veterinary Medicine (DVM) or equivalent degree from an accredited college or university. Requirements for admission include: 1) a grade point average of 3.00 with a BS or MS degree, or ranked in the upper half of the class for DVM or equivalent degree; and 2) completion of the Graduate Record Examination with a minimum score of 1100 on the verbal and quantitative portions.

Certain minimum requirements in addition to those required by the Graduate School must be met. For the PhD degree, any undergraduate deficiencies in biologic sciences, chemistry, mathematics, or physics must be resolved early in a program of study.

The graduate programs include fulfillment of course requirements, research skills, and completion of a thesis or dissertation. Faculty of the department may be consulted about specific requirements.

For a description of the MS and PhD interdisciplinary program in toxicology, see the section in this bulletin entitled, "General Degrees: Interdisciplinary Program."

VPHY 6050. Animal Physiological Chemistry. 2 hours.
Chemistry of cellular constituents and an introduction to the chemical process of living systems. Integrated functional aspects of the metabolic respiratory and transport systems of the animal body from a chemical standpoint.

VPHY 6090. Comparative Mammalian Physiology. 3 hours.
The animal body as a single functioning organism, including neurophysiology, cardiovascular and respiratory physiology.

VPHY 6100. Comparative Mammalian Physiology. 3 hours.
The animal body as a single functioning organism, including endocrinology, reproduction, renal, and alimentary physiology.

(VPHY)PHRM 6910. Introductory Toxicology. 3 hours.
Basic toxicology principles, including dose-response relationships, principles of toxicity and safety evaluation, pharmacokinetics and metabolism of chemicals, basic mechanisms of cellular injury, factors influencing toxicity, carcinogenesis/mutagenesis, governmental regulations, and exposure and risk assessment.

VPHY 6930. Research Methods. 1-3 hours. Repeatable for maximum 3 hours credit. 1-3 hours lab per week.
One to three laboratory rotations in the Department of Physiology and Pharmacology.

VPHY 7000. Master's Research/Physiology. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

VPHY 7010. Master's Research/Pharmacology. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

VPHY 7020. Master's Research/Pharmacology and Toxicology Emphasis. 1-10 hours. Repeatable for maximum 30 hours credit.
Research while enrolled for a master's degree under the direction of faculty members.

VPHY 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

VPHY 8000. Cardiovascular Physiology. 2 hours.
Prerequisite: VPHY 6090.
Advanced study of current concepts in cardiovascular physiology.

VPHY 8010. Mammalian Cell Physiology. 3 hours.
Prerequisite: Permission of department.
The physiology of the mammalian cell.

VPHY 8080. Ruminant Physiology. 3 hours.
The physiological, biochemical, and microbiological processes of digestion, absorption, and metabolism of absorbed nutrients.

VPHY 8100. Comparative Medical Endocrinology. 2 hours.
Prerequisite: VPHY 6100.
Advanced study of current concepts in mammalian endocrinology.

VPHY 8120. Renal and Fluid-Electrolyte Physiology: Body Electrolyte and Mineral Homeostasis and Renal Functions. 2 hours.
Prerequisite: VPHY 6100.
Current concepts in fluid-electrolyte physiology and renal function.

VPHY 8200. Animal Molecular Biology: Concepts and Current Literature. 2 hours.
Lectures and discussion on current research topics in molecular biology pertaining to veterinary medicine and livestock production.

VPHY 8400. Neurophysiology. 2 hours.
The nervous system stressing cellular physiology of the nervous system and how changes in cellular physiology impact behavior.

VPHY 8450. Advanced Clinical Pharmacology. 2 hours.
Presentation and discussion of current knowledge of chemotherapeutic agents and their clinical evaluation.

VPHY 8460. Molecular Pharmacology. 3 hours.
Prerequisite: VPHY 5200 or PHRM 6410.
The interaction of drugs with tissue receptors, and the absorption, distribution, metabolism, and elimination of drugs by the organism, and molecular carcinogenesis.

VPHY 8900. Physiology-Pharmacology Seminar. 1 hour. Repeatable for maximum 3 hours credit.
Current research findings and methodology in physiology, pharmacology, or toxicology.

(VPHY)PHRM 8910. Organ Systems Toxicology I. 3 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Mechanisms of injury of biological systems produced by chemical exposure. Adverse effects of chemicals on major bodily organs and organ systems including the blood, respiratory systems, nervous system, kidneys and the cardiovascular system.

(VPHY)PHRM(POUL) 8920. Organ Systems Toxicology II. 3 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Mechanisms of injury of biological systems produced by chemical exposure. Adverse effects of chemicals on major bodily organs and organ systems including the liver, carcinogenesis/mutagenesis, immune system, reproductive system, skin, and eyes.

(VPHY)(EHSC)PHRM(POUL) 8930. Chemical Toxicology. 3 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Chemical contamination of air, water, and food by major agricultural and industrial chemicals. Emphasis will be placed on sources of contamination, fate of chemicals in the environment, target species, health effects, chemical analyses, and contamination control.

(VPHY)PHRM 8940. Organ Systems Toxicology. 4 hours.
Prerequisite: PHRM(VPHY) 6910 or permission of department.
Mechanisms of injury of biological systems produced by chemical exposure. Adverse effects of chemicals on major bodily organs and organ systems, including the blood, respiratory system, nervous system, kidneys, cardiovascular system, liver, immune system, reproductive system, skin, and eyes.

VPHY 9000. Doctoral Research Physiology. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

VPHY 9010. Doctoral Research in Pharmacology. 1-10 hours. Repeatable for maximum 30 hours credit.
Research while enrolled for a doctoral degree under the direction of faculty members.

VPHY 9020. Doctoral Research Toxicology. 1-10 hours. Repeatable for maximum 30 hours credit.
Research while enrolled for a doctoral degree under the direction of faculty members.

VPHY 9300. Doctoral Dissertation. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Dissertation writing under the direction of the major professor.

Small Animal Medicine

Jeanne A. Barsanti, *Head*
Steve Budsberg, *Graduate Coordinator,*
542-6574
(Veterinary Medicine Building)

The Department of Small Animal Medicine does not have a graduate degree program. Clinical internships and residency programs are offered. Residents are enrolled in graduate degree programs of other departments in the college.

SAMS 5500/7500. Small Animal Internship. 10 hours. Repeatable for maximum 30 hours credit. 40 hours lab per week.
Not open to students with credit in SAMS 5500.
Undergraduate prerequisite: DVM degree and permission of department.
Clinical training for the graduate veterinarian desiring in-depth knowledge and skills relative to the diagnosis and treatment of small animal medical and surgical disorders.

SAMS 5610/7610. Small Animal Residency I. 5-15 hours. Repeatable for maximum 51 hours credit.
Not open to students with credit in SAMS 5610.
Undergraduate prerequisite: DVM degree and permission of department.
Clinical training during year one of a residency for graduate veterinarians desiring specialization in internal medicine, surgery, ophthalmology, dermatology, or other clinical specialties.

SAMS 5620/7620. Small Animal Residency II. 5-15 hours. Repeatable for maximum 51 hours credit.
Not open to students with credit in SAMS 5620.
Undergraduate prerequisite: SAMS 7610 and permission of department.
Clinical training during year two of the residency in internal medicine, surgery, ophthalmology, dermatology, or other clinical specialty.

SAMS 5630/7630. Small Animal Residency III. 5-15 hours. Repeatable for maximum 51 hours credit.
Not open to students with credit in SAMS 5630.
Undergraduate prerequisite: SAMS 7620 and permission of department.
Clinical training during year three of the clinical residency in internal medicine, surgery, ophthalmology, dermatology, or other clinical specialty.

SAMS 5640/7640. Small Animal Residency IV. 5-15 hours. Repeatable for maximum 51 hours credit.
Not open to students with credit in SAMS 5640.
Undergraduate prerequisite: SAMS 7630 and permission of department.
Clinical training during year four of a residency program in internal medicine, surgery, ophthalmology, dermatology, or other clinical specialty.

SAMS 5650/7650. Seminar in Small Animal Medicine and Surgery. 1-4 hours. Repeatable for maximum 40 hours credit.
This course is a seminar series presented by the student under the direction of a faculty member. The seminar can consist of a literature review or a review of clinical cases. After presentation, the group has questions and discussion.

SAMS 6310. Acute Pathophysiology. 1.5-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite or corequisite: DVM degree or permission of department.
The pathophysiology of patients that are critically ill or injured. Emphasis will be placed on applying these principles of pathophysiology to understanding the mechanism and response to therapy of syndromes involving the critical patient. Course format will include lecture, seminar, and literature review.

SAMS 6990. Special Problems. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: DVM degree or equivalent degree.
Problems defined by a faculty member with the student with approval of the department head. These are usually focused studies or projects by veterinarians entered in a clinical residency program.

SAMS 8010. Seminar in Medicine and Surgery. 0.7-2 hours. Repeatable for maximum 2 hours credit.
Prerequisite: (DVM degree or equivalent degree) and permission of department.
Graduate students and staff members will regularly participate in review and discussion of current research findings and methodology concerning medical and surgical disorders of animals.

Veterinary Anatomy and Radiology

Royce E. Roberts, *Head*
Sharon L. Crowell-Davis, *Graduate Coordinator,* 542-8343
(Veterinary Medicine Building)

Veterinary anatomy currently offers the MS degree. The program is available to all qualified students holding professional degrees in the healing arts as well as to graduate students having a strong biological background. Programs of study are available in the general area of microscopic and gross anatomy, embryology, neuroanatomy, electron microscopy, and radiology. All programs are strongly slanted toward a comparative approach and students are not limited to a particular species for research purposes.

Students interested in comparative anatomical study programs should contact this department directly to determine specific requirements.

VARB 4030L/6030L. Veterinary Histology. 3 hours.
Undergraduate prerequisite: Permission of department.
Veterinary applications of microscopic structure and organization of the tissues of domestic animals.

VARB 6070. Neuroanatomy of Domestic Animals. 1.3 hours.
Prerequisite: Permission of department.
The gross, microscopic, and ultrastructural aspects of neuroanatomy presented from a comparative viewpoint, using the dog as the basic animal. Open to qualified graduate or undergraduate students in the biological sciences.

VARB 7000. Master's Research. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

VARB 7110. Practicum in Teaching Gross Anatomy. 4 hours.
Prerequisite: VARB 5120 or VARB 5130 or VARB 5160 or VARB 7120 or VARB 7130 or VARB 7160 or permission of department.
The preparation and presentation of lectures and laboratory instruction on the gross anatomy of the dog and cat. Various methods of presentation of subject matter and student evaluation.

VARB 7120. Laboratory in Anatomy of the Horse. 3.7 hours.
Prerequisite: Permission of department.
Gross anatomy of the horse correlated with palpation of the live animal and radiographic anatomy with comparison to the dog, cat, and food animals. Emphasis is on the anatomy necessary to understand surgical procedures and clinical diagnosis.

VARB 7130. Laboratory in Anatomy of Food Animals. 3.7 hours.
Prerequisite: Permission of department.
Gross anatomy of food animals, mainly by dissection, correlated with palpation of the live animal and radiographic anatomy with comparison made to the dog, cat, and horse. Emphasis is on the anatomy necessary to understand surgical procedures and clinical diagnosis.

VARB 7140. Veterinary Animal Behavior. 1.3 hours.
Prerequisite: Permission of department.
Diagnosis of treatment of common animal behavior problems.

VARB 7150. Principles of Veterinary Anatomy. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Anatomic principles of each system of domestic animals.

VARB 7160. Laboratory in Anatomy of the Dog and Cat. 3.7 hours.
Prerequisite: VARB 5150 or VARB 7150.
Gross anatomy of the dog and cat correlated with palpation of the live animal and radiographic anatomy with comparison to the horse and food animals. Emphasis is on the anatomy necessary to understand surgical procedures and clinical diagnosis.

VARB 7300. Master's Thesis. 1-10 hours. Repeatable for maximum 30 hours credit.
Prerequisite: Permission of department.
Thesis writing under the direction of the major professor.

VARB 7340. Clinical Problems of Animal Behavior. 1-5 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
The diagnosis and treatment of animals with behavior problems. Review of literature on current cases.

VARB 8010. Problems in Veterinary Anatomy. 1-5 hours. Repeatable for maximum 10 hours credit.
Designed to allow graduate students the opportunity to explore, under supervision, anatomical problems of their choice. These may be in areas of gross or microscopic anatomy. Open to graduate students in the biological sciences meeting the course prerequisites.

VARB 8030. Advanced Veterinary Histology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: (VARB 5170 and VARB 5180-5180L) or permission of department.
Histological variations in the structure of organ systems of domestic animals. Functional aspects based on comparative morphology will be stressed. Open to all qualified graduate students in any area of the biological sciences.

VARB 8050. Special Radiographic Procedures. 3 hours.
Prerequisite: VARB 5310.
The methods and interpretation of special radiographic procedures. These findings are correlated with survey radiography.

VARB 8100. Fine Structure of Animal Tissues. 4 hours.
Prerequisite: CBIO 4000/6000-4000L/6000L and permission of department.
The electron microscope and related techniques to the understanding of tissue fine structure. Emphasis will be placed on giving the student a basis for interpretation of electron micrographs in a variety of animal tissues. Cellular and intracellular morphologic specializations will be related to the function of the tissue or organ.

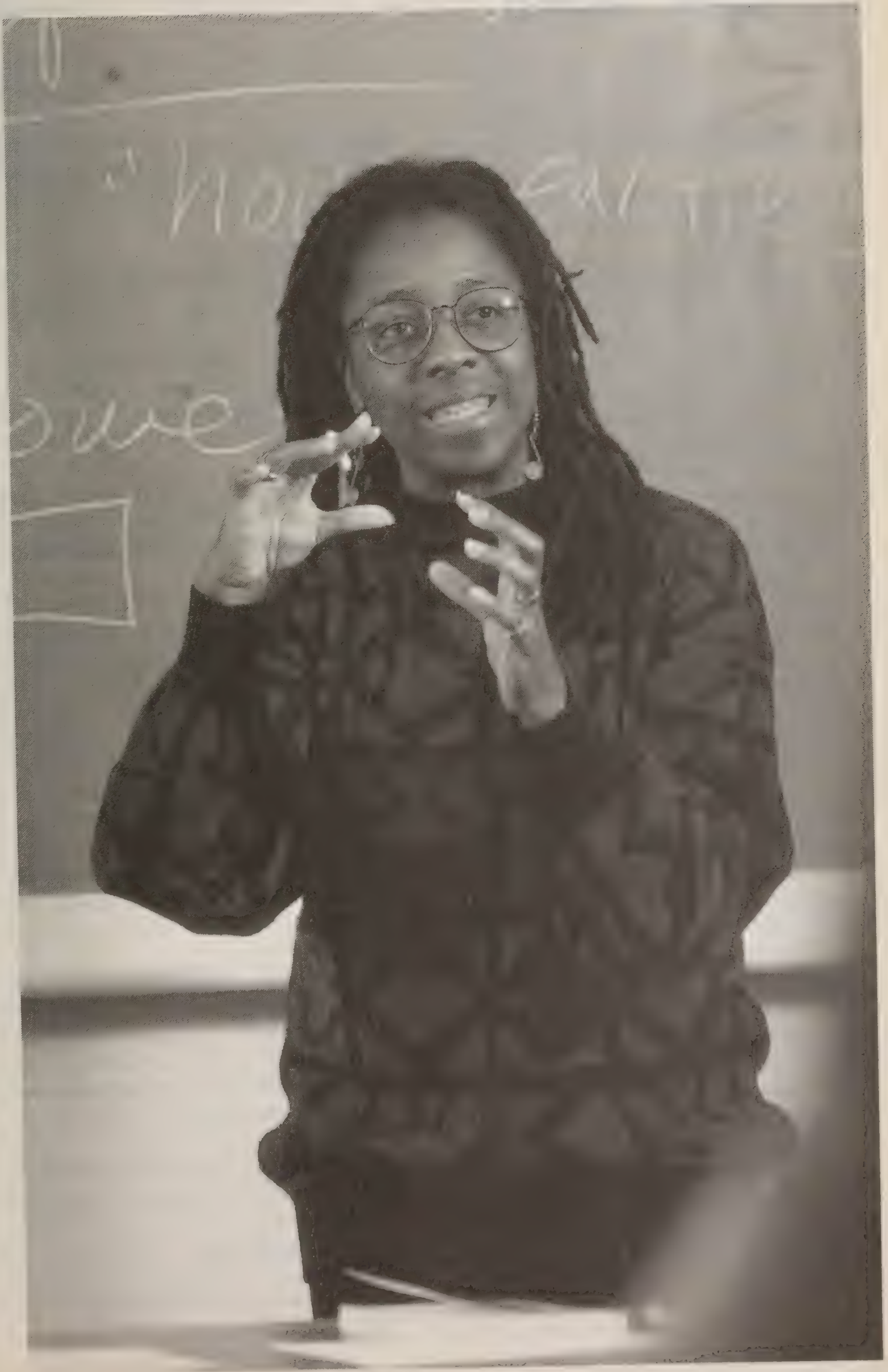
VARB 8340. Seminar in Applied and Domestic Animal Behavior. 1-5 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department.
The evaluation of research, development of theory, and practical applications of research on animal behavior, or a recent book on the subject will be evaluated.

VARB 9340. Practicum in Clinical Animal Behavior. 1-10 hours. Repeatable for maximum 20 hours credit.
Prerequisite: VARB 7340 and permission of department.
Diagnosis and treatment of animals with behavior problems. Includes pharmacologic, surgical, and behavior modification treatment techniques.

Veterinary Medicine

VETM 7100. Veterinary Ethics and Jurisprudence. 0.7 hours. Repeatable for maximum 1.4 hours credit.
Veterinary medical ethics and the basic laws and regulations governing veterinary medicine.
or a doctoral degree under the direction of faculty members.

GRADUATE FACULTY



Graduate Faculty

Ex-Officio Members

Adams, Michael F., *President of the University and Professor of Speech Communication*
Ph.D., Ohio State

Mace, Arnett C., Jr., *Interim Senior Vice President for Academic Affairs and Provost and Professor of Forest Resources*
Ph.D., Arizona

Huckaby, Henry M., *Senior Vice President for Finance and Administration*
M.B.A., Georgia State

Wrigley, Steve W., *Senior Vice President for External Affairs and Senior Public Service Associate in the Institute of Government*
Ph.D., Northwestern

Dunn, Delmar D., *Vice President for Instruction and Associate Provost and Regents' Professor of Political Science*
Ph.D., Wisconsin (Madison)

Dunning, Arthur N., *Vice President for Public Service and Outreach and Associate Provost and Professor of Higher Education*
Ph.D., Alabama

Mullendore, Richard H., *Vice President for Student Affairs and Associate Provost and Professor of Counseling and Human Development Services*
Ph.D., Michigan State

Patel, Gordhan L., *Vice President for Research and Associate Provost, Professor of Cellular Biology, and Adjunct Professor of Biochemistry and Molecular Biology*
Ph.D., Washington University (St. Louis)

Potter, William Gray, *Director of the Libraries*
Ph.D., Illinois (Urbana-Champaign)

Anderson, Wyatt W., *Dean of the College of Arts & Sciences and Alumni Foundation Distinguished Professor of Genetics*
Ph.D., Rockefeller

Benson, P. George, *Dean of the Terry College of Business and Simon S. Selig, Jr., Chair for Economic Growth*
Ph.D., Florida

Buchanan, Gale A., *Dean and Director of the College of Agricultural and Environmental Sciences and Professor of Crop & Soil Sciences*
Ph.D., Iowa

Castenell, Louis A., *Dean of the College of Education and Professor of Educational Psychology*
Ph.D., Illinois (Urbana-Champaign)

Crowley, John F., *III, Dean of the School of Environment and Design and Constance Knowles Draper Professor of Environment and Design*
Ph.D., Oklahoma (Norman)

Grasso, Maureen, *Dean of the Graduate School and Professor of Textiles, Merchandising and Interiors*
Ph.D., Tennessee

Nickols, Sharon Y., *Dean of the College of Family & Consumer Sciences and Professor of Housing and Consumer Economics*
Ph.D., Missouri (Columbia)

Øie, Svien, *Dean of the College of Pharmacy and Professor of Pharmaceutical & Biomedical Sciences*
Ph.D., State University of New York (Buffalo)

Prasse, Keith William, *Dean of the College of Veterinary Medicine and Professor of Pathology*
Ph.D., Iowa State

Shipley, David E., *Dean of the School of Law and Professor of Law*
J.D., Chicago

Soloski, John, *Dean of the College of Journalism and Mass Communication and Professor of Journalism*
Ph.D., Iowa

Sweeney, James M., *Interim Dean of the School of Forest Resources and Professor of Forest Resources*
Ph.D., Colorado State

Yegidis, Bonnie L., *Dean of the School of Social Work and Professor of Social Work*
Ph.D., South Florida

Appointed Members

Acosta Alzuru, Maria Carolina, *Assistant Professor of Advertising and Public Relations*
Ph.D., Georgia

Adams, Joyce E., *Associate Professor of Occupational Studies*
Ph.D., Virginia Polytechnical Institute

Adams, Malcolm R., *Professor of Mathematic*
Ph.D., Massachusetts Institute of Technology

Adams, Michael W., *Research Professor of Biochemistry & Molecular Biology and Adjunct Professor of Microbiology*
Ph.D., London

Adams, Nigel Graham, *Research Professor of Chemistry*
D.Sc., Birmingham

Adang, Michael J., *Professor of Entomology*
Ph.D., Washington State

Affolter, James Martin, *Associate Professor of Horticulture*
Ph.D., Michigan (Ann Arbor)

Aggrey, Samuel E., *Assistant Professor of Poultry Science*
Ph.D., British Columbia

Ainsworth, Scott H., *Associate Professor of Political Science*
Ph.D., Washington University

Akin, Danny Earl, *Adjunct Professor of Crop and Soil Sciences and Textiles, Merchandising and Interiors*
Ph.D., Georgia

Akoh, Casimir C., *Professor of Food Science and Technology and Adjunct Professor of Foods and Nutrition*
Ph.D., Washington State

Alber, Merryl L., *Associate Professor of Marine Sciences*
Ph.D., Boston

Albersheim, Peter, *Research Professor of Biochemistry and Molecular Biology, Botany, Chemistry, and Plant Pathology and Co-Director for the Center of Complex Carbohydrate Research*
Ph.D., California Institute of Technology

Alexander, Alison F., *Professor of Telecommunications*
Ph.D., Ohio State

Alexeev, Valery, *Professor of Mathematics*
Ph.D., Moscow M.V. Lomonosov State University

All, John Norman, *Professor of Entomology*
Ph.D., Wisconsin (Madison)

Allen, Christopher S., *Associate Professor of Political Science*
Ph.D., Brandeis

Allen, Joyce E., *Professor of Language Education*
Ed.D., Kansas

Allexsaht-Snider, Martha, *Associate Professor of Elementary Education*
Ph.D., California (Santa Barbara)

Alridge, Derrick P., *Assistant Professor of Social Foundations of Education*
Ph.D., Pennsylvania State

Alvarez, Jose B. IV, *Associate Professor of Romance Languages*
Ph.D., Arizona State

Alvermann, Donna E., *Research Professor of Reading Education*
Ph.D., Syracuse

Amason, Allen C., *Associate Professor of Management*
Ph.D., South Carolina (Columbia)

Ambartsumian, Levon, *Professor of Music*
D.M., Moscow

Ames, Glenn Clifford Webster, *Professor of Agricultural and Applied Economics*
Ph.D., Tennessee (Knoxville)

Amir, Nader, *Associate Professor of Psychology*
Ph.D., Chicago Medical

Amos, Henry E., *Professor of Animal and Dairy Science*
Ph.D., Kentucky

Amster, I. Jonathan, *Professor of Chemistry*
Ph.D., Cornell

Anderson, Douglas A., *Professor of English*
Ph.D., Virginia

Anderson, James C., Jr., *Professor of Classics*
Ph.D., North Carolina (Chapel Hill)

Anderson, James L., *Professor of Chemistry*
Ph.D., Wisconsin (Madison)

Anderson, Wyatt W., *Alumni Foundation Distinguished Professor of Genetics and Dean of the College of Arts and Sciences*
Ph.D., Rockefeller

Andress, Elizabeth L., *Associate Professor of Foods and Nutrition*
Ph.D., Pennsylvania State

Annis, Patricia A., *Associate Professor of Textiles, Merchandising and Interiors*
Ph.D., Kansas State

Arabnia, Hamid R., *Associate Professor of Computer Science*
Ph.D., Kent (Canterbury)

Armitage, Allan Munro, *Professor of Horticulture*
Ph.D., Michigan State

Arnold, Jonathan, *Professor of Genetics and Adjunct Professor of Statistics*
Ph.D., Yale

Arnold, Michael L., *Professor of Genetics and Adjunct Professor of Botany*
Ph.D., Australian National

Aron, Dennis N., *Professor of Small Animal Medicine*
D.V.M., Ohio State

Aronson, Jay E., *Professor of Management Information Systems*
Ph.D., Carnegie-Mellon

Asmussen, Marjorie Ann, *Professor of Genetics and Mathematics*
Ph.D., Stanford

Assaf, Francis Beshara, *Professor of Romance Languages*
Ph.D., California (Berkeley)

Atkinson, Scott E., *Professor of Economics*
Ph.D., Colorado (Boulder)

Atwater, Mary M., *Professor of Science Education and Adjunct Professor of Social Science Education*
Ph.D., North Carolina (Chapel Hill)

Avise, John Charles, *Research Professor of Genetics*
Ph.D., California (Davis)

Ayers, Benjamin C., *Associate Professor of Accounting*
Ph.D., Texas (Austin)

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Ph.D., McGill

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Zinkhan, George M., *Coca-Cola Professor of Marketing of Marketing and Distribution*
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Appendix

Prefix Abbreviations

Accounting	ACCT
Adult Education	EADU
Advertising and Public Relations	ADPR
African American Studies	AFAM
Agricultural and Applied Economics	AAEC
Agricultural Education	EAGR
Agricultural Extension	AEXT
Agricultural Leadership	ALDR
Agriculture	AGRI
Animal and Dairy Science	ADSC
Animal Nutrition	ANNU
Anthropology	ANTH
Arabic	ARAB
Art	ARTS
Art Education	ARED
Art History	ARHI
Art Interior Design	ARID
Artificial Intelligence	ARTI
Astronomy	ASTR
Avian Medicine	AVMD
Banking and Finance	FINA
Biochemistry and Molecular Biology	BCMB
Biological and Agricultural Engineering	ENGR
Biology	BIOL
Botany	BTNY
Business Education	EBUS
Cellular Biology	CBIO
Chemistry	CHEM
Child and Family Development	CHFD
Classical Culture	CLAS
Communication Sciences and Disorders	CMSD
Comparative Literature	CMLT
Computer Science	CSCI
Counseling and Human Development Services	ECHD
Crop and Soil Sciences	CRSS
Drama	DRAM
Early Childhood Education	EDEC
Ecology	ECOL
Economics	ECON
Educational Leadership	EDUL
Educational Psychology	EPSY
Educational Research and Measurement	ERSH
Elementary Education	EDEL
English	ENGL
Entomology	ENTO
Environmental Design	EDES
Environmental Ethics	EETH
Environmental Health Science	EHSC
Exercise Science	EXRS
Family and Consumer Science Education	EFCS
Food Science and Technology	FDST
Foods and Nutrition	FDNS
Forest Resources	FORS
Foundations of Education	EFND
French	FREN
Genetics	GENE
Geography	GEOG
Geology	GEOL
German	GRMN
Gerontology	GRNT
Global Policy Studies	GPST
Graduate School	GRSC
Greek	GREK
Health Promotion and Behavior	HPRB
Hebrew	HEBR
Higher Education	EDHI
Historic Preservation	HIPR
History	HIST
Horticulture	HORT
Housing and Consumer Economics	HACE
Institute on Human Development and Disability	IHDD
Instructional Technology	EDIT
Italian	ITAL

Japanese	JPNS
Journalism	JOUR
Journalism Core	JRLC
Journalism and Mass Communication	JRMC
Landscape Architecture	LAND
Language Education	ELAN
Large Animal MedicineLAMS	
Latin	LATN
Legal Studies	LEGL
Linguistics	LING
Management	MGMT
Management Information Systems	MIST
Management Science and Information Technology	MSIT
Marine Sciences	MARS
Marketing	MARK
Marketing Education	EMKT
Master of Nonprofit Organizations	MNPO
Mathematics	MATH
Mathematics Education	EMAT
Medical Microbiology	MMIB
Microbiology	MIBO
Middle School Education	EDMS
Music	MUSI
Music Education	EMUS
Occupational Studies	EOCS
Parasitology	PARA
Pharmacy	PHRM
Philosophy	PHIL
Physical Education and Sport Studies	PEDS
Physics	PHYS
Physiology and Pharmacology	VPHY
Plant Pathology	PATH
Political Science	POLS
Portuguese	PORT
Poultry Science	POUL
Psychology	PSYC
Reading Education	READ
Real Estate	REAL
Recreation and Leisure Studies	RLST
Religion	RELI
Risk Management and Insurance	RMIN
Romance	ROML
Russian	RUSS
Science Education	ESCI
Semitic	SEMI
Small Animal Medicine	SAMS
Social Science Education	ESOC
Social Work	SOWK
Social Work Education	ESWK
Sociology	SOCI
Spanish	SPAN
Special Education	SPED
Speech Communication	SPCM
Statistics	STAT
Studio Art	ARST
Technological Studies	ETES
Telecommunications	TELE
Textiles, Merchandising and Interiors	TXMI
Veterinary Anatomy and Radiology	VARB
Veterinary Medicine	VETM
Veterinary Pathology	VPAT
Womens Studies	WMST

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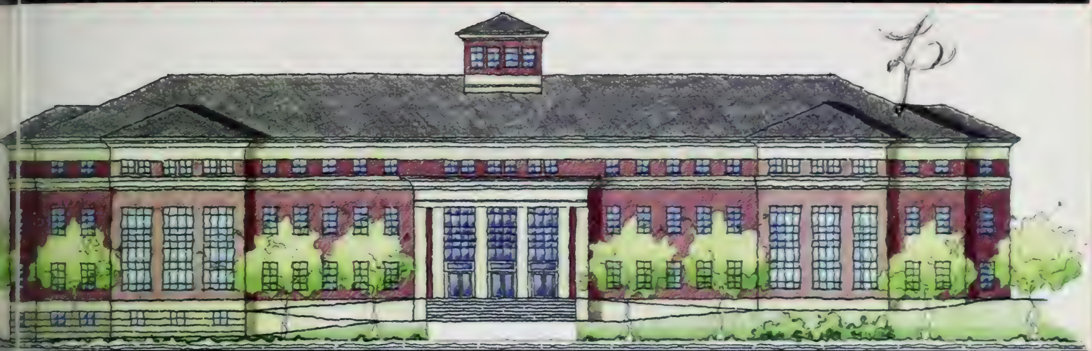

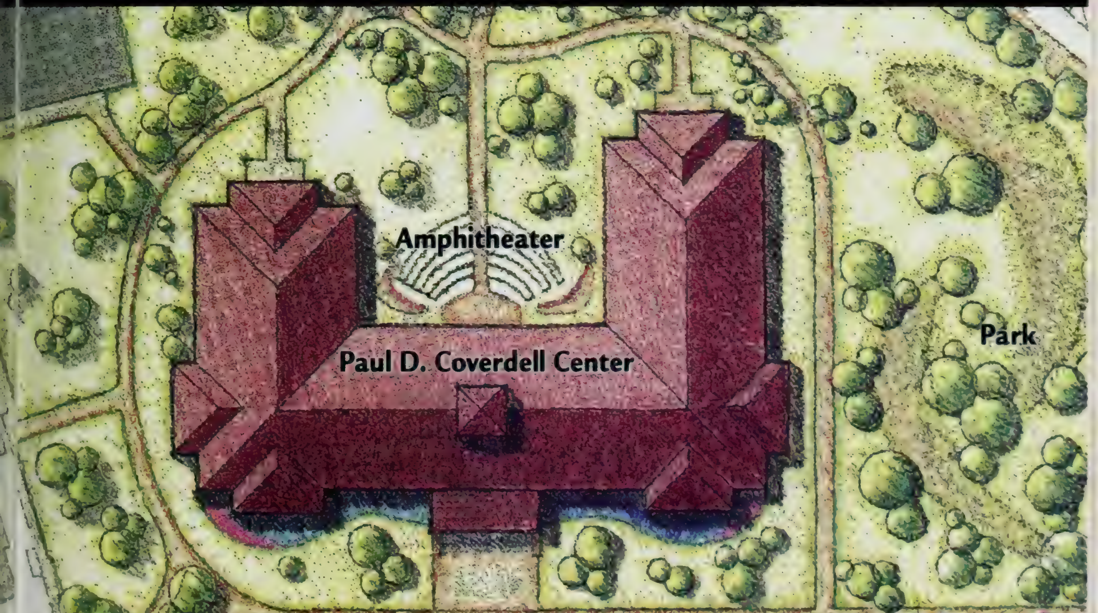

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2002-2003

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THE UNIVERSITY OF GEORGIA

Volume XCIX January 2002

Pursuant to directives of the President of this institution, the University of Georgia continues its affirmative implementation of equal opportunity to employees, students, covered contractors and vendors, and applicants for employment, admission, or contractor/vendor status. The University of Georgia will act in matters of employment, admissions, programs, and services free of prohibited bias with regard to race, creed, color, sex, national origin, religion, age, veteran status, or disability. Further, the University of Georgia will not maintain racially segregated facilities.

Continuation of the above policies is consistent with applicable provisions of the Civil Rights Act of 1964, the Education Amendments of 1972, Executive Order 11246, Revised Order 4, the Vietnam Era Veterans Readjustment Act of 1974, the Rehabilitation Act of 1973, and The Americans with Disabilities Act of 1990, as revised and/or amended, with implementing regulations. Accordingly, this institution will not discriminate in employment, admissions, programs, or services with regard to any position for which the applicant, employee, or student is qualified and will make reasonable accommodation for physical and mental limitations.

The Affirmative Action Plan implementing the above body of law, regulation, and policy is administered by Claude-Leonard Davis, Director of the UGA Equal Opportunity Office at 3 Peabody Hall, Athens, Georgia 30602-1622. Telephone inquiries concerning this Plan may be directed to (706) 542-7912. Copies of this Plan are available for inspection in the Equal Opportunity Office and in the UGA Main Library during normal weekday working hours.

This is an unofficial publication of the University of Georgia. The official publication for academic matters of the University of Georgia is the University of Georgia Bulletin. It appears on the World Wide Web at URL <http://www.bulletin.uga.edu>.

The statements set forth in this Bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and the institution. While the provisions of this Bulletin will ordinarily be applied as stated, the University of Georgia reserves the right to change any provision listed in this Bulletin including, but not limited to, academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Curriculum Systems Management Office of the Senior Vice President for Instruction Academic Affairs and Provost, Old College, Room 203. It is especially important that each student note that it is his/her responsibility to keep himself/herself apprised of current graduation requirements for his/her particular degree program.

UNDERGRADUATE BULLETIN
2002-2003

The University of Georgia: A Unit of the University System of Georgia

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Academic Calendar 2002—2003

2002	Spring Semester
Admission Application Complete	Nov. 1 (for Spring 02)
Residence Halls Open	Jan. 2, W
Orientation and Advisement	Jan. 2-3, W-Th
Late Registration	Jan. 4, F
Classes Begin	Jan. 7, M
Drop/Add	Jan. 7-10, M-Th
Holiday (M.L.K. Day)	Jan. 21, M
Midterm	Feb. 28, Th
Midpoint Withdrawal Deadline	Mar. 5, Tu
Classes End	Mar. 15, F
Spring Break	Mar. 18-22, M-F
Classes Resume	Mar. 25, M
Classes End	Apr. 29, M
Reading Day	Apr. 30, Tu
Final Exams	May 1-3, 6-7, W-F, M-Tu
Commencement	May 11, Sa

2002	Summer Semester
May Session	
Note: Classes meet for **150 minutes daily.**	
Admission Application Complete	Apr. 1 (for Summer 02)
Residence Halls Open	May 12, Su
Orientation and Advisement	May 13, M
Late Registration	May 14, Tu
Classes Begin	May 15, W
Drop/Add	May 15, W
Midterm	May 24, F
Midpoint Withdrawal Deadline	May 24, F
Holiday (Memorial Day)	May 27, M
Classes End	June 5, W
Final Exams	June 6, Th
Short Session I	
Note: Classes meet for **120 minutes daily**.	
Admission Application Complete	Apr. 1 (for Summer 02)
Residence Halls Open	June 4, Tu
Orientation and Advisement	June 5-6, W-Th
Late Registration	June 7, F
Classes Begin	June 10, M
Drop/Add	June 10-12, M-W
Midterm	June 21, F
Midpoint Withdrawal Deadline	June 21, F
Holiday (Independence Day)	July 4, Th
Classes End	July 5, F
Final Exams	July 8, M
Commencement	Aug. 10, Sa

Short Session II

Note: Classes meet for **120 minutes daily**.

Late Registration	July 8, M
Classes Begin	July 9, Tu
Drop/Add	July 9-10, Tu-W
Midterm	July 19, F
Midpoint Withdrawal Deadline	July 19, F
Classes End	Aug. 1, Th
Final Exams	Aug. 2, F
Commencement	Aug. 10, Sa

Regular (Thru) Session

Note: Classes meet for **60 minutes daily.**

Admission Application Complete	Apr. 1 (for Summer 02)
Residence Halls Open	June 4, Tu
Orientation and Advisement	June 5-6, W-Th
Late Registration	June 7, F
Classes Begin	June 10, M
Drop/Add	June 10-12, M-W
Holiday (Independence Day)	July 4, Th
Midterm	July 5, F
Midpoint Withdrawal Deadline	July 9, Tu
Classes End	Aug. 1, Th
Final Exams	Aug. 2, 5-6, F, M-Tu
Commencement	Aug. 10, Sa

2002	**Fall Semester**
Admission Application Complete	June 1 (for Fall 02)
Residence Halls Open	Aug. 12, M
Orientation and Advisement	Aug. 14-15, W-Th
Late Registration	Aug. 16, F
Classes Begin	Aug. 19, M
Drop/Add	Aug. 19-22, M-Th
Holiday (Labor Day)	Sept. 2, M
Midterm	Oct. 10, Th
Midpoint Withdrawal Deadline	Oct. 15, Tu
Fall Break	Oct. 31-Nov. 1, Th-F
Holiday (Thanksgiving)	Nov. 27-29, W-F
Classes Resume	Dec. 2, M
Classes End	Dec. 9, M
Reading Day	Dec. 10, Tu
Final Exams	Dec. 11-13, 16-17, W-F, M-Tu
Commencement	Dec. 21, Sa

2003	**Spring Semester**
Admission Application Complete	Nov. 1, 2002 (for Spring 03)
Residence Halls Open	Jan. 5, Su
Orientation and Advisement	Jan. 6-7, M-Tu
Late Registration	Jan. 8, W
Classes Begin	Jan. 9, Th
Drop/Add	Jan 9-14, Th-Tu
Holiday (M.L.K. Day)	Jan. 20, M
Midterm	Mar. 4, Tu
Midpoint Withdrawal Deadline	Mar. 7, F
Classes End	Mar. 14, F
Spring Break	Mar. 17-21, M-F
Classes Resume	Mar. 24, M
Classes End	May 1, Th
Reading Day	May 2, F
Final Exams	May 5-9, M-F
Commencement	May 10, Sa

This Calendar is correct as of the date of this publication, but may be subject to change during the next year. Please refer to the *Schedule of Classes* and/or other special announcements that may be forthcoming.

The University System of Georgia

The University System of Georgia includes 34 state-sponsored public institutions located throughout Georgia—19 universities and 15 two-year colleges.

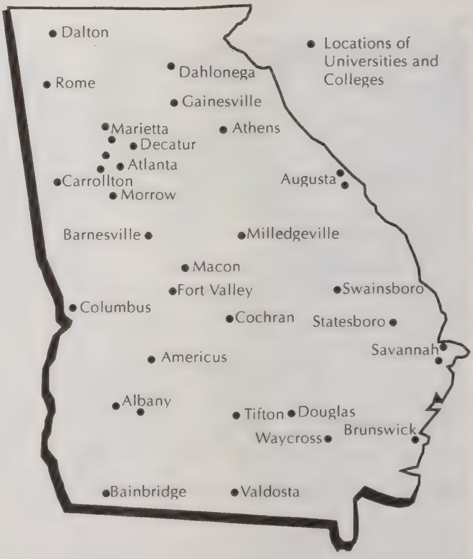
A 16-member constitutional Board of Regents—one from each of the state's 11 Congressional Districts and five from the state-at-large—governs the University System which was established in 1931. Board members are appointed by the Governor, subject to state senate confirmation, for seven-year terms. The Chairperson, the Vice Chairperson, and other officers of the Board are elected by its membership. The Chancellor, who is not a Board member, is the chief executive officer of the Board and chief administrative officer of the University System.

The overall programs and services of the University System are offered through three major components: Instruction; Public Service/Continuing Education; Research.

Board of Regents' policies for government, management and control of the University System and the Chancellor's administrative actions provide institutions a high degree of autonomy. The President is the executive head of each institution and is recommended by the Chancellor and appointed by the Board.

The University System Advisory Council, with 34 committees, engenders continual dialogue on major academic and administrative matters and makes recommendations to the Chancellor, who transmits them to the Board as appropriate, regarding academic and administrative operations in the System. The Council consists of the Chancellor, the Vice Chancellor, and all Presidents as voting members. It includes other officials of institutions as nonvoting members. The Council's 21 academic and 13 administrative committees are composed of institutional representatives, typically one from each unit, and deal with matters of System-wide application.

In-state and out-of-state tuition fees for students at all institutions are established by the Board of Regents. Other fees for student services and activities are established by institutions, subject to Board of Regents' approval. Non-mandatory fees established by institutions are subject to approval of the Board of Regents office.



Institutions of the University System of Georgia

Comprehensive and Special Purpose Universities

Athens
  The University of Georgia
Atlanta
  Georgia Institute of Technology
  Georgia State University
Augusta
  Medical College of Georgia

State and Regional Universities

Albany
  Albany State University
Americus
  Georgia Southwestern State University
Augusta
  Augusta State University
Carrollton
  State University of West Georgia
Columbus
  Columbus State University
Dahlonega
  North Georgia College and State University
Fort Valley
  Fort Valley State University
Marietta
  Kennesaw State University
  Southern Polytechnic State University
Milledgeville
  Georgia College and State University
Morrow
  Clayton College and State University
Savannah
  Armstrong Atlantic State University
  Savannah State University
Statesboro
  Georgia Southern University
Valdosta
  Valdosta State University

Two-year Colleges

Albany
  Darton College
Atlanta
  Atlanta Metropolitan College
Bainbridge
  Bainbridge College
Barnesville
  Gordon College
Brunswick
  Coastal Georgia Community College
Cochran
  Middle Georgia College
Dalton
  Dalton State College
Decatur
  Georgia Perimeter College
Douglas
  South Georgia College
Gainesville
  Gainesville College
Macon
  Macon State College
Rome
  Floyd College
Swainsboro
  East Georgia College
Tifton
  Abraham Baldwin Agri. College
Waycross
  Waycross College

University System of Georgia
244 Washington Street, S.W.
Atlanta, Georgia 30334

The University System of Georgia

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Colleges and Schools

Franklin College of Arts and Sciences (1801)
Wyatt W. Anderson, *Dean*

College of Agricultural and Environmental Sciences (1859)
Gale A. Buchanan, *Dean*

School of Law (1859)
David E. Shipley, *Dean*

College of Pharmacy (1903)
Svein Oie, *Dean*

Daniel B. Warnell School of Forest Resources (1906)
Arnett C. Mace, Jr., *Dean*

College of Education (1908)
Louis A. Castenell, Jr., *Dean*

Graduate School (1910)
Gordhan Patel, *Dean*

C. Herman and Mary Virginia Terry College of Business (1912)
J.M. Tull School of Accounting
P. George Benson, *Dean*

Henry W. Grady College of Journalism and Mass Communication (1915)
John Soloski, *Dean*

College of Family and Consumer Sciences (1933)
Sharon Y. Nickols, *Dean*

College of Veterinary Medicine (1946)
Keith W. Prasse, *Dean*

School of Social Work (1964)
Bonnie L. Yegidis, *Dean*

College of Environment and Design (2001)
John F. Crowley, *Dean*

School of Public and International Affairs (2001)
Thomas P. Lauth, *Interim Dean*

The University

University Profile

History

When the University of Georgia was incorporated by an act of the General Assembly on January 27, 1785, Georgia became the first state to charter a state-supported university. In 1784 the General Assembly had set aside 40,000 acres of land to endow a college or seminary of learning.

At the first meeting of the board of trustees, held in Augusta on February 13, 1786, Abraham Baldwin was selected president of the University. Baldwin, a native of Connecticut and a graduate of Yale University who had come to Georgia in 1784, drafted the charter adopted by the General Assembly.

The University was actually established in 1801 when a committee of the board of trustees selected a land site. John Milledge, later a governor of the state, purchased and gave to the board of trustees the chosen tract of 633 acres on the banks of the Oconee River in northeast Georgia.

Josiah Meigs was named president of the University and work was begun on the first building, originally called Franklin College in honor of Benjamin Franklin and now known as Old College. The University graduated its first class in 1804.

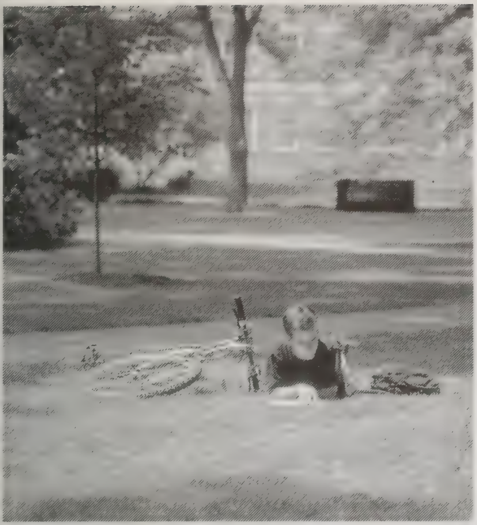
The curriculum of traditional classical studies was broadened in 1843 to include courses in law, and again in 1872 when the University received federal funds for instruction in agriculture and mechanical arts.

Fourteen schools and colleges, with auxiliary divisions, carry on the University's programs of teaching, research and service. These colleges and schools and the dates of their establishment as separate administrative units are: Franklin College of Arts and Sciences, 1801; College of Agricultural and Environmental Sciences, 1859; School of Law, 1859; College of Pharmacy, 1903; D. B.Warnell School of Forest Resources, 1906; College of Education, 1908; Graduate School, 1910; C. Herman and Mary Virginia Terry College of Business, 1912; Henry W. Grady College of Journalism and Mass Communication, 1915; College of Family and Consumer Sciences, 1933; College of Veterinary Medicine, 1946; School of Social Work, 1964; School of Environmental Design, 1969; School of Public and International Affairs (2001). The Division of General Extension, now the Georgia Center for Continuing Education, was incorporated into the University in 1947.

In 1931 the General Assembly of Georgia placed all state-supported institutions of higher education, including the University of Georgia, under the jurisdiction of a single board. This organization, known as the University System of Georgia, is governed by the Board of Regents. The Board of Regents' executive officer, the chancellor, exercises a general supervisory control over all institutions of the University System, with each institution having its own executive officers and faculty.

Mission

The University of Georgia, a land-grant and sea-grant university with state-wide commitments and responsibilities, is the state's flagship institution of higher education. It is also the state's oldest, most comprehensive, and most diversified institution of higher education. Its motto, "to teach, to serve, and to inquire into the nature of things," reflects the University's integral and unique role in the conservation and enhancement of the state's and nation's intellectual, cultural, and environmental heritage.



The University of Georgia shares with the other research universities of the University System of Georgia the following core characteristics:

1. a statewide responsibility and commitment to excellence and academic achievements having national and international recognition;
2. a commitment to excellence in a teaching/learning environment dedicated to serve a diverse and well-prepared student body, to promote high levels of student achievement, and to provide appropriate academic support services;
3. a commitment to excellence in research, scholarship, and creative endeavors that are focused on organized programs to create, maintain, and apply new knowledge and theories; that promote instructional quality and effectiveness; and that enhance institutionally relevant faculty qualifications;
4. a commitment to excellence in public service, economic development, and technical assistance activities designed to address the strategic needs of the State of Georgia along with a comprehensive offering of continuing education designed to meet the needs of Georgia's citizens in life-long learning and professional education;
5. a wide range of academic and professional programming at the baccalaureate, master's, and doctoral levels.

With its statewide mission and core characteristics, the University of Georgia endeavors to prepare the University community and the state for full participation in the global society of the twenty-first century. Through its programs and practices, it seeks to foster the understanding of and respect for cultural differences necessary for an enlightened and educated citizenry. It further provides for cultural, ethnic, gender, and racial diversity in the faculty, staff, and student body. The University is committed to preparing the University community to appreciate the critical importance of a quality environment to an interdependent global society.

As a comprehensive land-grant and sea-grant institution, the University of Georgia offers baccalaureate, master's, doctoral and professional degrees in the arts, humanities, social sciences, biological sciences, physical sciences, agricultural and environmental sciences, business, environmental design, family and consumer sciences, forest resources, journalism and mass communication, education, law, pharmacy, social work, and veterinary medicine.

The University attracts students nationally and internationally as well as from within Georgia. It offers the state's broadest array of possibilities in graduate and professional education, and thus a large minority of the student body is post-baccalaureate. The predominantly Georgian undergraduate student body is a mix of highly qualified students originally admitted as freshmen and selected transfer students principally from other University System institutions.

With original scholarship, basic and applied research, and creative activities constituting an essential core from which to draw, the impact of the land-grant and sea-grant mission is reflected throughout the state. Cooperative extension, continuing education, public service, experiment stations, and technology transfer are all designed to enhance the well-being of the citizens of Georgia through their roles in economic, social, and community development.

As it has been historically, the University of Georgia is responsive to the evolution of the state's educational, social, and economic needs. It aspires through its strategic planning to even closer contact and interaction with public and private institutions throughout the state as well as with the citizens it serves.

Accreditation

The University of Georgia is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097: Telephone number 404-679-4501) to award Associate, Bachelor's, Master's, and Doctor's degrees.

In addition, a number of the University's 14 colleges and schools are further accredited by appropriate educational associations.

Graduation Rate

Pursuant to Public Law 101-542, the Student Right to Know and Campus Security Act, the six year graduation rate for all students who enrolled at the University as first-time, full-time, baccalaureate degree-seeking students in the freshmen class of 1994 was 66.36 percent. The rate for male students was 63.63 percent; the rate for female students was 68.25 percent.

The Campus

The University sweeps across Athens' famed hills, covering approximately 4,300 acres within Clarke County.

Traditional North Campus is the home of the colleges of Arts and Sciences, Business Administration, and Journalism and Mass Communication, and the schools of Environmental Design and Law, as well as the Main Library. Noteworthy buildings on North Campus are Old College (1801), New College (1823), Demosthenian Hall (1824), the University Chapel (1832), and Phi Kappa Hall (1834). The Ladies' Garden Club Founders Memorial Garden enhances the area near Denmark Hall. South Campus, with an array of modern structures, has grown southward as the University continues to expand. Buildings include the Boyd Graduate Studies Research Center, colleges of Agricultural and Environmental Sciences, Family and Consumer Sciences, Veterinary Medicine, Education, and Pharmacy, and the schools of Forest Resources and Social Work, as well as the Georgia Center for Continuing Education, Stegeman Coliseum, and Butts-Mehre Heritage Hall.

State funds complemented by liberal private gifts, grants from foundations, and federal grants continue to increase the building program on campus. Buildings recently completed include the Life Sciences Building, which provides state-of-the-art facilities and equipment for biotechnology research and teaching; the Ramsey Student Center for Physical Activities, which provides a comprehensive fitness/exercise facility for students and faculty; and the Performing and Visual Arts Complex, which provides a home for the University's schools of art and music as well as the Georgia Museum of Art.

Athens

Georgia's "Classic City," Athens is a prospering community, one that reflects the charm of the Old South while developing in cultural and industrial areas.

A college town in every sense of the word, Athens appreciates its University population while recognizing its obligation to all residents to grow independently of the University.

The Clarke County population, according to a 2000 census estimate, is approximately 101,500. Athens' elevation is 600 to 800 feet above mean sea level, and because of its geographic location, the city is sheltered from much of the extreme weather of the winter season. Mean temperature for January, the coldest month, is 43°F., and for July, the warmest month, 79°F. Average minimum and maximum temperatures for January are 33° and 53°F., and for July, 68° and 89°F. Average rainfall is 50.42 inches.

Athens is served by two daily newspapers and an independent student newspaper, *The Red and Black*. Athens also has a weekly newspaper and the Atlanta newspapers, as well as eight local radio stations and the University's radio stations, WUOG-FM and WUGA-FM.

Network television is available through direct reception or cable within a 100-mile radius of Athens.

Two hospitals offering comprehensive health care serve Athens, and there are more than 80 churches in the area.

Admission

General Requirements

The University seeks to enroll students with superior academic credentials and strong personal character who will positively contribute to the diverse and rich cultural environment of campus life. Each applicant's record should reflect promise of growth, seriousness of purpose, and a sense of responsibility.

The University reserves the right to admit only those applicants whose records indicate potential for success in a university environment. The University also reserves the right to examine further any applicant by the use of psychological, achievement, and/or aptitude tests, and personal interview.

The University of Georgia complies with the Civil Rights Act of 1964 and is an Affirmative Action/Equal Employment Opportunity institution. Additionally, the University is actively involved in affirmative action recruitment.

Admission Procedures and Standards

The University, through the Office of Undergraduate Admissions, reserves the right to revise admissions criteria to any program, school, or college and/or to request additional information of applicants at any time during the academic year if deemed necessary.

HOW TO APPLY FOR ADMISSION

Applications for undergraduate admission may be submitted electronically at our Web site at *www.admissions.uga.edu* or obtained from the UGA Office of Undergraduate Admissions, 212 Terrell Hall, University of Georgia, Athens, Georgia 30602-1633. Completion of all forms and submission of all requirements by the appropriate deadlines is mandatory before the applicant's request for admission can be considered. Applicants to the University must enclose a non-refundable application fee of $50.00 to cover the expense of processing the application.

Once the application for admission, appropriate test scores, and other required records of the applicant are found to be complete and in proper order, an evaluation will be made in terms of academic record, the probability of completing the requirements for the desired degree, and the competitiveness within the applicant pool. The University reserves the right to terminate acceptances when enrollment limits are reached or when applicants' credentials are deemed incomplete or unsatisfactory.

Acceptance of each applicant will be determined by the Faculty Admissions Committee subject to the right of appeal as provided in the University System.

Specific information concerning housing, orientation, pre-registration and transferred courses is sent to the student following the official acceptance.

Freshman Admission

Applicants for freshman admission to summer or fall semester must apply by January 15, and must have a complete file by February 15. The University of Georgia admits freshman applicants whose high school curriculum, grades earned, and college admissions test scores indicate they can be successful at the university level. The admissions standards are primarily a combination of these academic factors and the competition for a limited number of class openings by a growing number of highly qualified applicants. For freshman admissions, the University calculates an admissions index based upon academic credentials and the actual performance of recently enrolled freshman. Historically, the most heavily weighted factor in the University's admissions process has been the grade average earned in college preparatory subjects. The University may also request and use qualitative information to better determine a student's potential for success at and contribution to the University.

REQUIRED HIGH SCHOOL CURRICULUM

Prospective freshmen are encouraged to take a full schedule of college preparatory subjects in high school. Only grades earned in high school courses in English, mathematics, science, social studies, and foreign language are used to calculate the academic grade point average for use in the admissions process.

It is recommended that high school students take the most rigorous curriculum available to be prepared for college work. Certain high school courses are recommended for particular college majors. For instance, trigonometry, geometry, chemistry, and physics are advised for anyone pursuing any Bachelor of Science degree.

Beginning in fall 2001, students graduating from high school who plan to enroll in a University System research university in a program leading to the baccalaureate degree, must present 16 units, distributed as outlined below.

College Preparatory Curriculum (CPC) Students Enrolling Fall 2001 and Later

Courses and Instructional Emphasis:
English (4 units)
— Grammar and usage
— Literature (American, English, & World)
— Advanced composition skills
Mathematics (4 units)
— Algebra I, II, and Geometry, and a fourth course with the three listed courses as prerequisites
Science (3 units)
— At least one laboratory course from the life sciences
— At least one laboratory course from the physical sciences
Social Science (3 units)
— United States Studies
— World Studies
— One additional unit
Foreign Language (2 units)
—Two courses in one language emphasizing speaking, listening, reading, and writing

SCHOOL EVALUATION

To have a complete file, freshman applicants must also submit a completed School Evaluation, which enables the Admissions office to compare the applicant's academic credentials to other seniors at that school and to other freshman applicants. On the School Evaluation, the high school counselor indicates the applicant's rank in class, the degree of difficulty of the applicant's curriculum, and the counselor's recommendation of the applicant, as well as information about the high school. Most high school counselors send the School Evaluation with the applicant's transcript. The School Evaluation can be downloaded from our Web site at *www.admissions.uga.edu.*

TEST REQUIREMENTS

An "official" (sent by the testing agency directly to UGA) report on the College Board's Scholastic Assessment Test (SAT-I) or the American College Test (ACT) is required of all freshman applicants. The University's school code number for the SAT is 5813; our code for the ACT is 0872. To expedite processing of your application, please include your correct Social Security Number and birth date when taking the SAT or ACT. Applicants whose high school class graduated five or more years ago may be considered for admission without SAT or ACT scores. These non-traditional applicants may be asked to submit results of the Collegiate Placement Exam (CPE) which can be taken at the University's Counseling and Testing Center.

It is highly recommended that applicants also submit two or three SAT-II test scores (English, Math, and a foreign language). Students who have had at least two years of foreign language in high school should take the College Board SAT-II Subject Exam in that language if they plan to continue studying it. Optional but strongly recommended SAT-II or Advanced Placement tests include English, chemistry, biology, physics, American or European history, mathematics, art, computer science, political science, economics, music, and psychology. Further information on the University's advanced placement policies may be obtained from the Honors Program office. Information about the College Board SAT-II or Advanced Placement tests may be obtained from the high school counselor, or directly from Educational Testing Service, P.O. Box 592, Princeton, New Jersey 08540.

Under University System of Georgia Board of Regents policy, freshman applicants from non-accredited high schools or home schools must submit satisfactory scores on eight required College Board SAT-II exams to be considered for admission.

Transfer Admission

To be considered for University admission, all transfer applicants must be in good academic standing at their last college attended and must have official transcripts of all college work sent to the University. The deadline to receive transfer applications **and** all related documents for fall semester is June 1, for spring is November 1, and for summer is April 1. Transfer applications are generally processed during the term immediately preceding the intended term of transfer to UGA. The transfer grade point average will be calculated by UGA Admissions on grades earned in all transferable college work attempted. A student who is on academic warning, probation, or dismissal from the last institution attended will not be admitted to the University.

The transfer grade point average required for admission to UGA is established each year by the Faculty Admissions Committee. Generally, transfer applicants of sophomore standing (30 to 59 transferable hours) with overall cumulative academic averages of 2.8 or higher will be considered for University admission. Transfer applicants of junior standing (60 or more transferable hours) with overall cumulative academic averages of 2.5 or higher will be considered for University admission. However, University colleges, schools, and individual majors may require higher averages for acceptance. Admission to the University does not imply that the student is eligible for admission to a specific major. Precise admission requirements can be obtained from the appropriate dean's office.

If a student planning to transfer to UGA from another institution within the University System of Georgia has completed an area of the semester core curriculum with courses taken either at that institution or another institution from which UGA accepts transfer credit, UGA will accept the area as satisfied. Students should direct their questions about core curriculum areas A-F to the dean's office of the school or college in which they will be advised.

To calculate an overall transfer grade point average, UGA Admissions must include all grades earned, including Ds and Fs, in all academic courses an applicant has attempted. Normally, grades earned in a course which is repeated after first earning a C grade or better in that course will be excluded from the transfer admissions average. The calculated transfer average does not include grades earned in physical education, orientation courses, or career-oriented courses from a terminal associate degree program.

Transient students may enroll for a summer semester in some UGA undergraduate classes by applying for admission and presenting a letter of good academic standing from their home college. Note: Courses taken at the University while a student is a transient will not be used later in determining admissibility as a regular transfer student to UGA.

Post-baccalaureate students are college graduates taking additional undergraduate courses, but not for a UGA undergraduate degree. To be admitted, post-baccalaureate students must submit official transcripts from each college attended showing proof of graduation and the required overall transfer academic grade point average for the UGA major they designate.

Second degree students are college graduates planning to obtain an additional undergraduate degree from UGA. To be admitted, official transcripts must be submitted from all colleges attended and students must meet the minimum grade point average required for the intended major.

Any transfer credit received after an offer of admission that brings the overall grade point average below the specific requirements for admission may result in withdrawal of the admission offer before or after matriculation at the University.

TRANSFER OF COLLEGE CREDIT

The University of Georgia accepts credits from other accredited colleges and universities if the courses taken are "college parallel" and not remedial or career (terminal) courses. In order to earn a four-year degree from the University, a student must complete 40 of the last 60 semester hours on the University of Georgia campus. Twelve hours of this work must be in senior division courses of the student's major.

A maximum of 100 academic semester hours may be applied from other institutions toward a second baccalaureate degree. In order to earn a first baccalaureate degree from the University, a minimum of 40 semester hours in residence at the University of Georgia is required.

Students transferring to the University who have completed some or all of the core curriculum courses at another unit of the University System will receive full transfer credit. However, courses from a two-year college that would be earned in the upper division at the University are generally nontransferable. A grade of C or higher in freshman English composition courses is required to guarantee transferability (see English 1101 and 1102, page 36). Students transferring from quarter calendar institutions may multiply the number of quarter hours by two-thirds to determine generally the number of semester hours that will be transferred. The University of Georgia converted from quarters to semesters in fall 1998. All transfer credit earned through summer 1998 is recorded as quarter hours. All transfer credit earned fall 1998 and later is recorded as semester hours.

Choice of School or College

Freshmen and sophomores undecided about a major should carefully review this Bulletin to determine which school or college meets their interests. The Colleges of Agricultural and Environmental Sciences, Arts and Sciences, Business Administration, and Education allow a student entrance as an Unspecified major. Appointments with one's academic advisor and other University services can assist in the decision about a major.

Transfer juniors or seniors cannot declare an Unspecified major in the College of Arts and Sciences.

Applicants for Readmission

Undergraduate students who are not enrolled at the University for more than two consecutive semesters must apply for readmission and pay the $25.00 application fee at least 20 calendar days (30 days for graduate students) prior to the published date of late registration. Students who are on academic dismissal from the University should first contact their University of Georgia academic school or college of last enrollment. Undergraduate readmission applications are available electronically from our Web site at *www.admissions.uga.edu* or from the Office of Undergraduate Admissions. Undergraduate students who have not been enrolled at the University for a period of five years or more may be subject to different University, college or school, or department requirements than those which existed at the time of their matriculation or entry into a given college/school, major, minor, or certificate program.

Graduate and Professional Students

Students in the professional programs of journalism, law, pharmacy, and veterinary medicine must meet additional admission requirements found in the appropriate sections of the Bulletin.

Students applying to graduate programs should consult the *Graduate School Bulletin* or the dean of the particular school or college for a list of requirements.

Recipients of the GED

Persons over 18 years of age whose secondary schooling was interrupted may be admitted by presenting a State Department of Education Certificate of High School Equivalency (GED) and by passing entrance examinations as determined by the Admissions Committee. In general, the Faculty Admissions Committee asks that such applicants take the College Board Scholastic Assessment Test (SAT-I) or the American College Test (ACT), unless the applicant's class has been graduated more than five years.

Students will be considered for admission on the basis of the GED scores only after their class has been graduated one full year from secondary school.

Admission of High School Juniors

Under exceptional circumstances, students may be admitted to the University at the end of their junior year in high school. These students must have outstanding records in college preparatory subjects and must present scores on the combined verbal and mathematics sections of the Scholastic Assessment Test or the American College Test satisfactory to the University Faculty Admissions Committee. The recommendation of the student's high school principal or counselor will also be considered by the Admissions Committee.

Admission and Registration of Persons 62 Years of Age or Older

Pursuant to the provisions of an amendment to the Georgia Constitution, the Board of Regents established the following rules with respect to enrollment of persons of age 62 or older in units of the University System. To be eligible for enrollment under the provisions of this amendment such persons:

(1) Must be residents of Georgia, 62 years of age or older at the time of registration, and must present a birth certificate or other comparable written documentation of age to enable the Registrar to determine eligibility.

(2) May enroll as regular students in courses offered for resident credit on a "space available" basis without payment of fees, except for supplies or laboratory or shop fees.

(3)Must meet all System and institutional admission requirements.

(4)Will have all usual student and institutional records maintained.

(5) Must meet all System, institutional, and legislated degree requirements such as the Regents' Exam, Major Area Exam, and History and Constitution instruction or exams, if they are degree-seeking students.

(6)May not enroll in Dental, Medical, Veterinary, or Law Schools under the provisions of this policy.

Orientation

New undergraduate students are required to register for and attend an orientation session prior to enrolling at the University. Orientation provides required placement testing, academic advising and registration for classes, as well as general information pertinent to newly entering students. Orientation information is mailed in late spring to students who have been accepted for the following fall semester and by mid-December and mid-May for the spring and summer semesters, respectively.

Registration and Late Registration Penalties

Registration dates are listed in the Academic Calendar. A student who fails to register on the scheduled days will be subject to penalties of $25.00 as listed in the financial information section. No student will be admitted after the designated drop/add period except by special permission. No course may be added to a student's schedule after the first fourteen calendar days of a term, with the exception of a research, dissertation, or thesis course at the graduate level.

Medical History

New students and former students who have been absent from the University for over one year must have a complete medical history form on file with the University Health Center prior to registration. Information regarding medical history to be collected will be sent with notification of acceptance for admission and should be returned to the Medical Records Department, University Health Center.

Financial Information

Cost of Education

The estimated cost of education for a Georgia resident is $11,006 per academic year. This estimate includes tuition and fees, books and supplies, room and board, and personal expenses. An additional out-of-state fee assessed all non-Georgia residents increases this estimate to $18,902.

Students of forest resources, law, pharmacy, and veterinary medicine will find the cost somewhat more because of higher fees required.

The University reserves the right to change its fees, charges, rules, and regulations at the beginning of any term and without previous notice. This right will be exercised cautiously.

Fees

APPLICATION FEES

Application Fee	$50.00

Required of all undergraduate students applying for admission or readmission, and covers expenses of processing applications only. Make check or money order payable to the University of Georgia. DO NOT SEND CASH.

Committment Deposit—Undergraduates	$200.00

Required of a new student accepted by the University to reserve his or her place in the class. Must be paid by May 1 of the year in which admission is sought. Deposit is non-refundable, but is applicable toward payment of the first term tuition and fees.

Fee Deposit—Law School	$300.00

Required of a new student accepted by the Law School to reserve his or her place in the class. Must be paid by April 1 of the year in which admission is sought, or within 30 days of acceptance, whichever comes later. Deposit is non-refundable, but is applicable toward payment of the first term tuition and fees.

Fee Deposit—College of Veterinary Medicine	$100.00

Required from each applicant accepted for admission to the College of Veterinary Medicine. Must be received by May 1 or within three weeks after the date of issuance of the acceptance. If deposit is not received within the specified time, an alternate candidate will be called to fill the place of the accepted applicant. Deposit is non-refundable, but is applicable toward payment of the first term tuition and fees.

AUDITOR'S FEE

Persons desiring to attend courses or lectures without examination or credit may register to audit a course. Fees for auditors are the same as those for students registered for credit.

BREAKAGE DEPOSIT AND COURSE FEES

There are no general laboratory fees, but special fees, including breakage fees, are required for a few courses and some field trips. Students are held responsible for any breakage they cause.

SPECIAL FEES AND CHARGES

Service Charge for Late Registration	$25.00
Service Charge for Late Payment of Housing Fee	$25.00

Special Examination Fee

The University reserves the right to charge a fee for any special examination given at the request of a student.

Transcript Fee

Each copy	$2.00
FAX service	$3.00

Replacement Fee

Diploma	$10.00

Special Programs Fees

Agencies sponsoring regularly enrolled students who receive special academic programming or administrative services are expected to pay fees in addition to those normally charged for the usual services. While rates charged will be determined by contract arrangements, the scheduled fees for such services will be $125 per semester.

Payment

METHOD OF PAYMENT

On-line Payment Authorization of Fees Via OASIS

The following payment options are available via the OASIS Registration System to satisfy fees:

Sponsorships
Loans, Grants, or Scholarships
Check/Cash
Credit Card

In cases where more than one payment option is available, the student must declare how fees will be satisfied. In most cases students who are sponsored, receive financial aid, or elect credit card payment may satisfy fee payment prior to exiting the OASIS Registration System. Students whose payment method is Check/Cash should screen print their fee invoice prior to exiting the system and pay in one of the following manners:

By Mail

The fee invoice along with check or money order (do not mail cash) should be mailed to the University of Georgia Bursar's Office, Business Services Building, Athens, GA 30602-4227. Payment must be received in the Bursar's Office by the fee payment deadline to avoid schedule cancellation.

At Cashier's Window

Payment may be made by cash or check during cashiering hours at the cashier's window located in the Bursar's Office on the first floor of the Business Services Building, 424 East Broad Street.

At Night Depository

Payment may be made after hours until the fee payment deadline at the night depository located at the front of the Business Services Building, 424 East Broad Street.

TIME OF PAYMENT

Pre-Registration (Phase I)

Students who pre-registered during the current term for the next term must pay fees by the pre-payment deadline in order to avoid schedule cancellation. Those who fail to pay fees by the deadline will be dropped from the class rolls, and the class openings will be made available to others who register late.

Late Registration (Phase II)

Fees and charges for room and board are due and payable at the time of late registration. A student is not officially registered at the University until such fees and charges are paid in full. A late registration service charge will be assessed after the close of Phase II. If payment is not made by the end of the late registration period, the student's registration will be canceled. Exceptions to the time of payment are outlined below.

DEFERRED PAYMENT OF FEES

Students who meet one of the following requirements may defer payment upon approval by the Student Accounts Department, Business Services Building, 424 East Broad Street:

TUITION AND STUDENT FEES (2001-2002)

For Students with 12 or more Semester Credit Hours

	In-State Tuition	Out-of-State Tuition	Student Fees	Total
Regular Students				
Residents	$1,316.00		$393.00	$ 1,709.00
Non-residents		$5,264.00	393.00	5,657.00
Forest Resources Students				
Residents	1,546.00		393.00	1,939.00
Non-residents		6,184.00	393.00	6,577.00
Law Students				
Residents	2,243.00		393.00	2,636.00
Non-residents		8,972.00	393.00	9,365.00
Pharmacy Students				
Residents	1,514.00		393.00	1,907.00
Non-residents		6,056.00	393.00	6,449.00
Pharmacy Doctorate				
Residents	2,241.00		393.00	2,634.00
Non-residents		8,514.00	393.00	8,907.00
Veterinary Students	3,184.00		393.00	3,577.00

The per credit hour charge for students with less than 12 credit hours is as follows:

	Residents	*Non-residents*
Regular Students	$110.00	$440.00
Forest Resources Students	129.00	515.00
Law Students	187.00	748.00
Pharmacy Students	126.00	505.00
Pharmacy Doctorate	187.00	710.00
Veterinary Students	266.00	N/A

Each student with more than 5 credit hours must also pay the following student fees:

Health fee*	$139.00
Student activity fee	38.00
Student athletic fee**	38.00
Transportation fee	53.00
Ramsey Student Center fee	50.00
Technology Fee	75.00

Note: Students who enroll for five hours or less have the option of waiving student activity, student athletic, Ramsey Student Center, and health fees. This waiver must be elected at the time of registration. The technology fee is mandatory and cannot be waived.

MEAL PLANS (2001-2002)

5 day plan	$ 1,010.00 per semester
7 day plan	$ 1,111.00 per semester

RESIDENCE HALL FEES (2001-2002)

Fees range from $1,308.00 to $1,848.00 per semester.

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*Optional Dental Program available to all enrolled students and their spouses for an additional fee.

**Student Athletic Fee assessed for fall and spring semesters only.

1. Students whose fees are guaranteed and will be paid by an outside agency under an agreement with the University of Georgia up to the amount authorized for a specific academic term.
2. Students who have a University-administered loan or scholarship in process up to the amount of the aid granted for a specified academic term.
3. Foreign students who have a certificate or other acceptable documented evidence that payment of fees will be made after a statement of charges for the student has been presented for payment. The deferment will be limited to the amount stated in the certificate or other document for a specified academic term.

Deferred fees will be due and payable as follows:

Fall	November 1
Spring	March 1
Summer	July 15

FEE REFUNDS

Students who formally withdraw from the University within the time period described below will be entitled to a refund. Withdrawal from the University cannot be accomplished through drop/add after the first day of class.

The refund percentage shall be computed on a pro rata basis determined by dividing the number of calendar days remaining in the semester (from the student's official withdrawal date through the last day of scheduled exams) by the total calendar days in the semester. The total calendar days in a semester includes weekends and exam periods but excludes scheduled breaks of five or more calendar days. Students who withdraw from the University when the calculated percentage of remaining days is 40% or less are not entitled to a refund of any portion of institutional charges.

The following are not entitled to any refund of fees paid: students suspended for disciplinary reasons, students who leave the University when disciplinary action is pending, or students who do not formally withdraw.

No refunds for reduction in hours after the drop/add period are allowed unless such reduction is the fault of the University.

Refunds for elective charges due to withdrawals during the term will be made on a prorated basis depending on the date of withdrawal. Students who withdraw from the University when the calculated percentage of remaining days in the term is 40% or less are not entitled to a refund of any portion of institutional charges.

Financial Aid and the Refund Policy

In the event a student receives financial aid, completes registration, and subsequently reduces his/her enrollment status or withdraws, the amount of funds to be returned to federal, state, private, or University programs will be in accordance with regulations concerning refunds and repayments to those appropriate programs. A calculation will be made on all financial aid recipients to determine whether a student who completely withdraws during a term has "earned" the monies disbursed. A student "earns" his/her aid based on the period of time they remain enrolled. During the first 60% of the term, a student earns financial aid funds in direct proportion to the length of time the student remains enrolled. Beyond the 60% point all aid is considered earned. The responsibility to repay "unearned" aid is shared by the University and the student in proportion to the aid each is assumed to possess. For more details concerning refunds for students with financial aid, please contact the Student Accounts Department in 105 Business Services for further information. All refunds, up to the amount of the aid received for the term, will be returned to financial aid sources, according to the following priority:

1. Federal Family Educational Loans
2. Federal Direct Student Loans
3. Federal Perkins Loans
4. Federal Pell Grants
5. Federal Supplemental Educational Opportunity Grants
6. Student Incentive Grants
7. Other federal sources of aid
8. Other state, private, or institutional aid
9. Student

Rules Governing the Classification of Students for Tuition Purposes in the University System of Georgia

1. (a) If a person is 18 years of age or older, he or she may register as an in-state student only upon a showing that he or she has been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.

   (b) No emancipated minor or other person 18 years of age or older shall be deemed to have gained or acquired in-state status for tuition purposes while attending any educational institution in this State, in the absence of a clear demonstration that he or she has in fact established legal residence in this State.
2. If a person is under 18 years of age, he or she may register as an in-state student only upon a showing that his or her supporting parent or guardian has been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.
3. If a parent or legal guardian of a minor changes his or her legal residence to another state following a period of legal residence in Georgia, the minor may continue to take courses for a period of twelve consecutive months on the payment of in-state tuition. After the expiration of the twelve-month period, the student may continue his or her registration only upon the payment of fees at the out-of-state rate.
4. In the event that a legal resident of Georgia is appointed as guardian of a nonresident minor, such minor will not be permitted to register as an in-state student until the expiration of one year from the date of court appointment, and then only upon a proper showing that such appointment was not made to avoid payment of the out-of-state fees.
5. Aliens shall be classified as nonresident students; provided, however, that an alien who is living in this country under an immigration document permitting indefinite or permanent residence shall have the same privilege of qualifying for in-state tuition as a citizen of the United States.
6. *Waivers*: An institution may waive out-of-state tuition for:
   (a) nonresident students who are financially dependent upon a parent, parents or spouse who has been a legal resident of Georgia for at least twelve consecutive months immediately preceding the date of registration; provided, however, that such financial dependence shall have existed for at least twelve consecutive months preceding the date of registration;
   (b) international and superior out-of-state students, selected by the institutional president or his authorized representative, provided that the number of such waivers in effect does not exceed two percent of the equivalent full-time students enrolled at the institution in the fall term immediately preceding the term for

which the out-of-state tuition is to be waived. Institutions are authorized to approve an additional one percent for special cases such as superior out-of-state students in selected programs and/or additional international students.

(c) full-time employees of the University System, their spouses, and their dependent children;

(d) medical and dental residents and medical and dental interns at the Medical College of Georgia;

(e) full-time teachers in the public schools of Georgia or in the programs of the State Board of Technical and Adult Education and their dependent children. Teachers employed full-time on military bases in Georgia shall also qualify for this waiver;

(f) career consular officers and their dependents who are citizens of the foreign nation which their consular office represents, and who are stationed and living in Georgia under orders of their respective governments. This waiver shall apply only to those consular officers whose nations operate on the principle of educational reciprocity with the United States;

(g) military personnel and their dependents stationed in Georgia and on active duty unless such military personnel are assigned as students to System institutions for educational purposes;

(h) selected graduate students at University-level institutions;

(i) students who are legal residents of out-of-state counties bordering on Georgia counties in which an institution of the University System is located and who are enrolled in said institution;

(j) full-time members of the Georgia National Guard;

(k) students who are certified by the Commissioner of Industry, Tourism, and Trade as being part of a competitive economic development project.

7. A student is responsible for registering under the proper residency classification. A student classified as a nonresident who believes that he/she is entitled to be classified as a legal resident may petition the Registrar for a change in status. The petition must be filed no later than sixty (60) days after the term begins in order for the student to be considered for reclassification for that term. If the petition is granted, reclassification will not be retroactive to prior terms. The necessary forms for this purpose are available in the Registrar's office.
8. Questions concerning classification for fee-payment purposes should be directed to one of the following persons:

Undergraduate applicants for admission or readmission:

Director of Admissions
212 Terrell Hall

Graduate applicants for admission or readmission:

Director of Graduate Admissions
534 Boyd Graduate Studies Research Center

Currently enrolled students:

Assistant Registrar
114 Holmes/Hunter Academic Building

Academic Information

The statements set forth in this Bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and this institution. While the provisions of this Bulletin ordinarily will be applied as stated, the University of Georgia reserves the right to change any provision listed in this Bulletin including, but not limited to, academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Registrar's Office, in the offices of the academic deans, and in the Office of the Senior Vice President for Academic Affairs and Provost.

Undergraduate and Professional Degrees Offered by the University

The University will confer degrees upon candidates who have satisfied the prescribed regulations and conditions as follows:

A. *In the College of Agricultural and Environmental Sciences*, the degrees of Bachelor of Science in Agriculture (B.S.A.), Bachelor of Science in Agricultural Engineering (B.S.A.E.), Bachelor of Science in Biological Engineering (B.S.B.E.), Bachelor of Science in Environmental Health (B.S.E.H.), and Bachelor of Science in Environmental Sciences (B.S.E.S.);

B. *In the Franklin College of Arts and Sciences*, the degrees of Bachelor of Arts (A.B.), Bachelor of Science (B.S.), Bachelor of Science in Chemistry (B.S. Chem.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B. Mus.);

C. *In the Terry College of Business*, the degree of Bachelor of Business Administration (B.B.A.);

D. *In the College of Education*, the degree of Bachelor of Science in Education (B.S.Ed.);

E. *In the College of Environment and Design*, the degree of Bachelor of Landscape Architecture (B.L.A.);

F. *In the College of Family and Consumer Sciences*, the degree of Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.);

G. *In the D. B. Warnell School of Forest Resources*, the degree of Bachelor of Science in Forest Resources (B.S.F.R.);

H. *In the Henry W. Grady College of Journalism and Mass Communication*, the degree of Bachelor of Arts in Journalism (A.B.J.);

I. *In the School of Law*, the degree of Juris Doctor (J.D.);

J. *In the College of Pharmacy*, the degree of Bachelor of Science in Pharmacy (B.S. Phar.), the degree of Doctor of Pharmacy (Pharm.D.);

K. *In the School of Social Work*, the degree of Bachelor of Social Work (B.S.W.);

L. *In the College of Veterinary Medicine*, the degree of Doctor of Veterinary Medicine (D.V.M.).

DUAL DEGREES

A graduate of any program may receive the baccalaureate degree of any other program by completing the additional studies required in that program. The minimum resident requirement is 30 semester hours. Courses taken in residence at the University of Georgia for the purpose of meeting program requirements for one degree may be counted toward the resident requirement for the second degree. (Students not enrolled at the University for a period of five years or more must complete 30 semester hours in residence for the second degree in addition to the courses taken to satisfy the first degree.) Individual schools and colleges within the University may impose additional resident requirements. Students pursuing an additional major within the same degree objective are considered to be enrolled for a double major.

MINOR FIELDS OF STUDY

A minor must contain 15 to 18 semester hours of course work, with at least 9 hours of upper division course work, in a field of study other than the student's major. Courses taken to satisfy Core Areas A through E may not be counted as course work in the minor. Courses taken in Core Area F may be counted as course work in the minor. The intent of establishing minor fields of study is to offer students the opportunity to broaden their education through the minor field. The selection of a minor field of study should be made to fulfill this goal.

The availability of a minor is noted in this Bulletin alongside the description of the corresponding major or certificate program. The department shall publish and make available to students the requirements for the minor—the total number of hours required, along with the enumeration of any particular courses that are mandated or excluded, residency requirements (if any) for the minor courses, and grade requirements for minor courses if those requirements differ from the general University standard for credit (a D as the minimum passing grade). The University Curriculum Committee has determined that if a course satisfies a major requirement it cannot also be used to satisfy course requirements in the minor field of study.

A student may select a minor in consultation with his or her advisor. The student may then consult an advisor in the

minor field who can inform the student of remaining requirements for the minor. When the student has met the requirements for the minor, the advisor in the minor field will then certify that fact to the student's dean. The completed minor will be recorded on the student's permanent transcript, but not on the diploma. For students completing a minor before graduation, the minor will appear on the transcript at the time of graduation. For students completing a minor after graduation, the statement shall appear on the transcript in chronological order following the courses taken subsequent to graduation. A student must be enrolled at the time a minor is approved by the Board of Regents, or subsequent to that date, to receive credit for the minor. A student may have more than one minor.

MILITARY COMMISSIONS

A student who satisfactorily completes the advanced ROTC program may be commissioned as second lieutenant in the U.S. Army or U.S. Air Force in conjunction with the degree. Detailed information concerning the Army and Air Force ROTC programs may be found under "Division of the Armed Services."

Degree Requirements

THE UNIVERSITY OF GEORGIA CORE CURRICULUM

The core curriculum was established within the University System of Georgia as a means of facilitating the transfer of credit for students at the lower division level as they work toward baccalaureate degrees within University System colleges and universities. The various institutions within the University System, in establishing their core curricula, provide for (1) 60 semester credit hours of which a minimum of 42 are in general education and 18 in major-related courses; (2) assurances that all courses satisfactorily completed in the core curriculum of any unit of the University System will be acceptable and transferable to other units of the University System; and (3) the preservation of the maximum possible amount of institutional autonomy.

Briefly, the Core Curriculum includes:

	HOURS
AREA A: Essential Skills English and math courses common throughout the University System.	**9-10**
AREA B: Institutional Options UGA students select these courses with the assistance of academic advisors.	**4-5**
AREA C: Humanities/Fine Arts Two courses selected from an approved list with the assistance of academic advisors.	**6**
AREA D: Science, Mathematics and Technology Two science courses and one mathematics/technology course.	**10-11**
AREA E: Social Sciences Four courses which may also satisfy history and constitution requirements.	**12**
AREA F: Courses Related to the Program of Study	**18**

Courses which may be used to satisfy core requirements are listed in the Programs of Study section of this Bulletin.

HOURS REQUIRED FOR THE UNDERGRADUATE DEGREE

A baccalaureate degree must contain a minimum of 120 semester hours. Baccalaureate degree programs also have a maximum of 120 semester hours (exclusive of physical education hours). Exceptions to the maximum degree length requirements may be made only with approval of the Board of Regents.

A baccalaureate degree program must require at least 21 semester hours of upper division courses in the major field and at least 39 semester hours of upper division work overall.

ENVIRONMENTAL LITERACY REQUIREMENT

All students who matriculate in fall 1993 and thereafter must attain knowledge of basic principles concerning environmental issues.

This requirement may be satisfied by taking one course from a list of approved courses, available on the Bulletin Web site at *www.bulletin.uga.edu.* This requirement pertains only to the first baccalaureate degree; it does not apply to any subsequent degrees.

EXAMINATIONS ON THE CONSTITUTIONS

Examinations on the Constitution of the United States and that of the state of Georgia are required of all persons receiving a degree from the University, including those transferring Political Science 1101 from institutions outside the state unless exempted by courses dealing with these constitutions. Approved courses for exemption are as follows:

U.S. Constitution
  POLS 1101
  POLS 1105H
  POLS 4700
  POLS 4710
  HIST 2111 and 2112
  HIST 2111 and 2112H
  HIST 2111H and 2112H
  HIST 2111H and 2112
U.S. and Georgia Constitution
  POLS 1101 (taken in Georgia)
  POLS 1105H (taken in Georgia)
Georgia Constitution
  POLS 2201 (University System course; not offered at UGA, but may be offered at other System institutions)
  POLS 4650 (taken in Georgia)
  POLS 4660
  HIST 4100

Examinations are given once each semester; dates are announced in the *Schedule of Classes*. Students who fail the examination twice must satisfy the requirement with course work.

EXAMINATIONS ON UNITED STATES AND GEORGIA HISTORY

A passing grade on an examination on the history of the United States and Georgia is required of all persons receiving a baccalaureate degree from the University unless exempted by one of the following courses: HIST 2111, HIST 2112, HIST 2111H, HIST 2112H, HIST 3080H, HIST 4100.

Examinations are given to freshmen during orientation and twice each semester by the Counseling and Testing Center. Reexamination is permitted. Examination dates are announced in the *Schedule of Classes*.

REGENTS' TESTING PROGRAM

Each institution of the University System of Georgia shall assure the other institutions, and the System as a whole, that students obtaining a degree from that institution possess certain minimum skills of reading and writing.

The Regents' Testing Program has been developed to help in the attainment of this goal. The objectives of the Testing Program are: (1) to provide System-wide information on the status of student competence in the areas of reading and writing; and (2) to provide a uniform means of identifying those students who fail to attain the minimum levels of competence in the areas of reading and writing.

Passing the Regents' Test is defined as having passed all components of the test by scoring above the cutoff score specified for each component. The test may be administered either in its entirety or as one or more components depending on the needs of the students. If one component of the test is passed, that component need not be retaken.

A student holding a baccalaureate or higher degree from a regionally accredited institution of higher education will not be required to complete the Regents' Test in order to receive a degree from a University System institution.

In order to implement effectively the goals of the Testing Program:

1. Students enrolled in undergraduate degree programs shall pass the Regents' Test as a requirement for graduation. Students, including transfer students and/or readmitted students, may take the test after they have completed the required basic core English courses. They will be required to take the test in the semester after they have earned 30

hours of college-level credit if the test has not been passed previously.

2. All students who have not passed the Regents' Test during the semester in which they will have earned 45 credit hours shall be required to take non-degree credit courses in remedial reading and/or remedial writing in each subsequent term of attendance until they have passed all components of the test.
   a. No enrolled student required to take a remedial course may retake the Regents' Test until the appropriate course is completed with an S grade.
   b. Failure to complete the remedial course(s) satisfactorily will result in a U posted on the student's permanent record, prohibiting the student from registering to retake the Regents' Test. Additionally, the remedial course(s) must be repeated each term until the Regents' Test requirement is satisfied.
3. Having passed the Regents' Test shall not be a condition of transfer into an institution. Students transferring from System programs which require the test shall be subject to all provisions of this policy. Students from institutions outside the System, or from System programs not requiring the test, who transfer into a System institution with 30 or more college-level credit hours shall take the test no later than their second semester of enrollment and in subsequent terms shall be subject to all provisions of his policy.
4. Students whose native tongue is not English may choose to take an alternate version of the Regents' Exam to certify literacy competence. The Writing Center, 72 Park Hall, offers an alternate examination at approximately the same date as the usual exam. Otherwise, all stipulations included in this section apply to international students. International students may contact the Writing Center at 542-2119 or via e-mail addressed to: wrctr@parallel.park.uga.edu.
5. For extraordinary situations, each institution shall develop special procedures for certifying the literacy competence of students. A written description of those procedures shall be submitted to the Chancellor for approval. A record of the action shall be reported by the Chancellor to the Education Committee of the Board of Regents. Such procedures shall include provision for remediation if needed and formal examination prior to certifying competency. Such examination shall equal or exceed the standards of the Regents' Testing Program.
6. Students may request a formal review of their failure on the essay component of the Regents' Test if their essay received at least one passing score among the three scores awarded and if they have successfully completed the courses in English composition required by the local institution. This review will be conducted in accordance with Board-approved procedures.
7. Remedial work as required under the above policy shall be in keeping with regulations in satisfaction of federal and state student financial assistance and other such eligibility programs.
8. These regulations shall not prohibit institutions from increasing requirements affecting the Regents' Testing Program, provided such increased requirements are authorized by the Chancellor, and provided further that such requirements are published in the official bulletin of the institution prior to implementation. Such additional requirements shall in no way affect the transfer of students from one institution to another or the readmission of students to institutions of the University System.

Students' Review Procedures—Regents' Testing Program

1. The review will be initiated at the campus level, with procedural matters to be determined by the institution. The on-campus review, however, will be conducted by the three (3) faculty members designated by the institution as a review panel.
2. The on-campus review panel may (a) sustain, by majority opinion, the essay's failing score, thus terminating the review process, or (b) recommend, by majority

opinion, the re-scoring of the essay by the Regents' Testing Program central office. The student will be notified concerning the results of the on-campus review.

3. If the on-campus panel recommends re-scoring of the essay, that recommendation will be transmitted in writing, along with a copy of the essay, to the office of the system Director of the Regents' Testing Program. The Director will utilize the services of three (3) experienced Regents' essay scorers other than those involved in the original scoring procedures for the essay component of the Regents' Test. The decision of this panel on the merits of the essay will be final, thus terminating the review process. The student will be notified through the institution concerning the results of the review.

BASIC PHYSICAL EDUCATION

1. All students entering the University fall 1991, and thereafter, who matriculate for their first baccalaureate degree are required to pass one semester credit hour of basic physical education. This requirement may be satisfied by successful completion of any combination of basic physical education courses. Basic physical education courses are designated PEDB 1010-1990; courses for physical education majors (PEDS), health promotion and education majors (HPRB) or recreation majors (RLST) will not satisfy the basic requirement. This requirement shall not apply for those entering a second or subsequent bachelor's degree program. The total number of credit hours in basic physical education courses that may be applied toward an undergraduate degree will be determined by individual schools and colleges. Students entering the University prior to fall 1991 and who graduate fall 1991 or later may at their option choose whether they will be governed in their degree requirement by the basic physical education requirement at the time they matriculated or by the new requirement.
2. All students entering the University fall 1977 through summer 1991 who matriculate for their first baccalaureate degree are required to pass five quarter hours (or its semester equivalent) of basic physical education. This requirement may be satisfied by successful completion of any combination of basic physical education courses. Basic physical education courses are designated PEDB 1010-1990; courses for physical education majors (PEDS), health promotion and education majors (HPRB) or recreation majors (RLST) will not satisfy the basic requirement. This requirement shall not apply for those entering a second or subsequent bachelor's degree program. The number of credit hours which may be applied toward an undergraduate degree will be determined by individual schools and colleges.
3. All baccalaureate degree candidates who entered the University prior to fall 1977 are required to satisfy six courses of basic physical education. Students entering the University with 60 semester hours or more credit will be considered to have met this requirement. Students transferring fewer than 60 semester hours will exempt one course in basic physical education for each fifteen hours of credit transferred. A maximum of six credit hours may be applied toward a degree.

The above requirements are applicable to all students except as follows:

1. **Veterans**: Veterans who have served 180 days or more may receive credit based on their military service depending on date of matriculation. Veterans may receive no more credit for basic physical education courses than is required for a degree. To establish credit, veterans will be required to present a copy of their DD214 form to the Admissions Office.
2. **Army and Air Force ROTC Participants**: Students who have successfully completed the Army ROTC Advanced Camp or the Air Force ROTC Field Training Encampment shall be considered to have met the basic physical education requirement, if they have not already satisfied it with basic physical education course work.

3. **Disabled Students**: Adapted physical education classes are available to facilitate the meeting of the University physical education requirement by disabled students. Policies with regard to physical education for disabled students are as follows:

   The School of Health and Human Performance is committed to fulfilling the physical education needs of all students. An adapted physical education program operates as a normal extension of the basic physical education program for students who, because of temporary or permanent disability or medical conditions, cannot participate in the mainstream physical education program. It is through this adapted program that, with few exceptions, all students are able to satisfy the basic physical education requirement. Students with health problems or disabilities should consult with the Staff Physician at the University Health Service. Students will in turn be referred to the adapted physical education specialist who works in concert with the University Staff Physician, and subsequently will be placed in appropriate physical education activities.

There are no exceptions to the physical education requirement for reasons of age, sex, or disability except upon special recommendation by the Staff Physician at the University Health Service.

ENGLISH 1101 AND 1102

English 1101 and 1102 (English Composition) are required for all undergraduate degrees from the University of Georgia. A grade of C or better is required for English 1101 and an average of 2.0 or better is required for both courses.

Transfer students not receiving freshman English credit for writing courses taken at other institutions should bring catalog descriptions of those courses for review to the Freshman English Office, 135 Park Hall.

RESIDENT REQUIREMENT

Students who are candidates for a baccalaureate degree for fall 1995 and thereafter must earn 40 of the last 60 semester credit hours in residence. In addition, 12 of the semester credit hours required for a student's major must be earned in residence. Courses which are remedial in nature and are numbered less than 1000 shall not be counted in satisfaction of this requirement. Students may receive resident credit for University-sponsored studies abroad programs for which course registration and fee payment are effected through the University. University of Georgia students participating in a University-approved academic program (such as the National Student Exchange, UGA international exchange programs, and approved study abroad programs) are exempt from that part of the residency requirement that states 40 of the last 60 semester credit hours be completed at the University; in such cases students need only complete 40 semester hours at the University in order to satisfy the residency requirement. Credit earned through programs sponsored by other institutions, organizations, or approved student exchange programs will be recorded as transfer credit.

Students who present acceptable college credit earned before September 1960, or who are enrolled for a second baccalaureate degree, may satisfy the resident requirement by completing in residence 30 semester hours in courses numbered 2000 and above with a cumulative average grade of 2.0 or better. Students enrolled in the combined B.S.-M.D. program with the Medical College of Georgia may satisfy the resident requirement at the University by completing 30 semester hours in residence in courses approved by the Dean of the Franklin College of Arts and Sciences.

General Academic Regulations and Information

THE ACADEMIC YEAR

The college year has two semesters of approximately fifteen weeks each: fall semester, latter part of August to Christmas holidays; spring semester, January to early May; as well as a summer term, June to latter part of August. A May session is also included in the summer term. Exact semester dates appear in the University calendar. Students may enter the University at the beginning of any term.

The University holds three commencement ceremonies each year in May, August, and December for students scheduled to graduate at the end of the spring, summer, and fall semesters, respectively.

UNITS OF CREDIT

The unit of credit is the semester hour, representing one hour of in-class work per week for one semester or its equivalent in other forms of instruction. Two or sometimes three hours of laboratory work are considered as the equivalent of one hour of class work.

Most University courses meet three times a week for one semester and carry a credit of three semester hours.

ACADEMIC WORKLOAD

The normal academic work load during the academic year is 15 hours per semester for undergraduates and 12 hours per semester for graduate students. In programs requiring more than 120 hours for graduation, the load per semester may be somewhat higher. Undergraduate students must carry 12 hours per term and graduate students 9 hours per term to be certified as full-time students. Undergraduate students must carry six hours per term and graduate students five hours per term to be certified as one-half time students.

Graduate, professional, and undergraduate students are considered full-time and half-time during the summer term upon enrollment in 6 and 3 hours, respectively. However, undergraduates must be enrolled in at least 12 hours during the summer to be considered full-time for financial aid purposes.

During their work term, students participating in the Cooperative Education Program will be certified by the Registrar's Office as being enrolled as full-time students.

ACADEMIC ADVISING

Academic advisement is considered an essential part of the student's educational experience at the University of Georgia. Academic advisors are assigned to each student to assist in various areas of academics, including preregistration each semester, choosing a major, and planning a program of study. Advisors aid students in making certain that all educational requirements of both the University and the specific degree program are met. Advisors cannot provide a guarantee of graduation and/or certification within a specified period of time. Therefore, selection of appropriate courses to meet degree requirements is ultimately the student's responsibility.

STUDENT RESPONSIBILITY

It is especially important that each student knows it is his/her responsibility to keep apprised of current graduation requirements for a particular degree program.

ACADEMIC HONESTY

The University of Georgia seeks to promote and ensure academic honesty and personal integrity among students and other members of the University community. A policy on academic honesty (and procedural guidelines for adjudication of alleged violations of academic honesty) has been developed to serve these goals. Academic honesty means performing all academic work without plagiarizing, cheating, lying, tampering, stealing, receiving assistance from any other person or using any source of information that is not common knowledge (unless that assistance or use is authorized by the person responsible for supervising that academic work or fairly attributed to the source of assistance or information).

Academic honesty is vital to the very fabric and integrity of the University of Georgia. All students must comply with an appropriate and sound academic honesty policy and code of honest behavior. All members of the University community are responsible for and involved in bringing about an honest University and all must work together to ensure the success of the policy and code of behavior.

To preserve and enhance the University's academic honesty policy, the Student Government Association proposed a student Honor Code that was approved by the University Council in May 1997. The Honor Code appears on the University's application for admission and states, "I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." All applicants for admission to the University must sign this statement as part of the admission process.

Specific regulations governing student academic conduct are contained in the policy manual, *A Culture of Honesty*, and these should be read to avoid any misunderstanding. All members of the academic community are responsible for knowing the policy and procedures on academic honesty. A "plain language summary" of the policy has been made available to students and faculty to assure understanding of the academic honesty system and its proper functioning.

Students and faculty who suspect that an act of academic dishonesty has taken place should contact the Office of the Vice President for Instruction, Old College, (706) 542-0432.

STUDENTS' RIGHT OF APPEAL

University of Georgia students have the right to appeal academic decisions. Usually the appeal goes first to the unit responsible for the decision (for example, grades to the faculty members who assigned the grades; department requirements to the department; college or school requirements to the school; university requirements to the Educational Affairs Committee). An unfavorable ruling at one level can be appealed to the successive levels (viz., a faculty decision can be appealed to the department; a department ruling can be appealed to the college in which the instructional unit is located; a college-level ruling can be appealed to the Educational Affairs Committee; the Educational Affairs Committee ruling can be appealed to the President of the University; and, except for grade appeals, the President's ruling can be appealed to the Board of Regents).

All grade appeals must be initiated within one calendar year from the end of the term in which the grade was recorded. Additional details on appeals of academic matters, including special provisions for academic dishonesty cases, can be obtained from the Office of the Vice President for Instruction, Old College, (706) 542-0432.

CLASSIFICATION OF STUDENTS

In the undergraduate schools and colleges, students will be classified according to the number of academic hours they have earned.

Classification	*Hours Earned*
Freshman	Less than 30 hours
Sophomore	At least 30 hours
Junior	At least 60 hours
Senior	At least 90 hours

Junior Division and Senior Division

Some of the undergraduate schools and colleges further classify their students as junior division students or senior division students. In general, a junior division student is a freshman or sophomore; a senior division student is a junior or senior, and has completed at least 60 semester hours.

Law or honors students may enroll in graduate courses with the approval of their advisor, the course instructor, the graduate coordinator of the department in which the course is offered, and the Graduate Dean. Approval must be secured prior to registering for the course. Appropriate applications are available in the Honors Office and in the Law School.

COURSES AND CREDIT

Course Numbers

Courses numbered less than 1000 are either non-credit or academic assistance courses; those from 1000 to 1999 are designed for freshman and sophomore (junior division) students; those numbered 2000 to 2999 are mainly sophomore courses but, in special instances when justified by course and curricular requirements, may be given senior division (junior and senior) classification. Courses numbered 3000 to 3999 are generally designed for mixtures of junior and senior level students. Courses taken by juniors and seniors along with graduate students carry the numbers 4000 to 5999 for undergraduates and 6000 to 7999 for graduate students. Courses numbered 8000 or 9000 are open only to graduate students. Courses which carry an H suffix are Honors courses.

Course Changes

It is the responsibility of students to select the appropriate courses for their degree program. If students are uncertain as to their degree requirements, they should consult with their academic advisor/dean prior to scheduling.

Students are expected to attend classes on a regular basis during the drop/add period. A student who incurs an excessive number of absences may be withdrawn from the class at the discretion of the professor. Students who find it necessary to make adjustments in their class schedules during the drop/add period must follow the procedures and adhere to the deadlines and dates published in the *Schedule of Classes*. No course may be added to a student's schedule after the first fourteen calendar days of a term, with the exception of a research, dissertation, or thesis course at the graduate level. Exceptions to this policy require the approval of the instructor of the course, the department head/program director, and the student's dean.

Fee Adjustments—Tuition is charged on a per semester hour basis for up to 12 hours. Full tuition is charged for 12 or more semester hours. If a schedule change results in an additional fee being due, the student should report to the Treasurer's Office to pay additional fees. No academic credit will be given unless all fees are paid by the end of the drop/add period.

Course Auditing

Students may audit courses with the approval of their academic dean and the department offering the course. The registration procedure is the same as registration for credit except that the auditor must request audit status at the time of registration.

Fees for auditors are the same as those for students registered for credit. After the drop/add period, credit registrations may not be changed to audit, and audit registrations may not be changed to credit registrations. However, a student may withdraw from an audited course at any time with a grade of W. No punitive grade may be assigned.

Course Challenging

Insofar as accrediting policies permit, the University allows a student the opportunity to receive resident credit for courses by examination without attending the regular classes. Although specific standards of eligibility for challenging a course vary somewhat among the schools and colleges, in general the student must (1) demonstrate to the department in which the course is offered evidence of independent study to master the materials required in the course; (2) not be currently enrolled in the course to be challenged, nor have previously completed the course; and (3) be currently enrolled in the University. Upon completion of the course challenge the instructor will complete and file an official Course Challenge Form with the Registrar of the University.

Based upon the results of the examination, regular grades of A, B, C, D, or F are assigned for the challenged course unless the course is not one authorized to receive these grades, in which case the appropriate grade will be assigned from among those available for the course.

Some courses cannot be challenged. A student should check with the dean or department head regarding the procedure for challenge within a particular school/college.

Class Attendance

Students are expected to attend classes regularly. A student who incurs an excessive number of absences may be withdrawn from a class at the discretion of the professor.

Withdrawal from Courses

Students who fail to drop a course or wish to withdraw from a course after the designated drop/add period for a term must withdraw through OASIS (Online Access to the Student Information System). An instructor also may withdraw a student form a course due to excessive absenses as defined in the course syllabus. Withdrawals after the drop/add period will result in course entries on the academic record with grades of W or WF as assigned by the instructor(s). A student who withdraws or is withdrawn for excessive absences after the midpoint withdrawal deadline of the semester (date to be specified in the *Schedule of Classes*) is assigned a grade of WF, except in those cases in which the student is doing satisfactory work and the withdrawal is recommended by the Office of Student Affairs because of emergency or health reasons. No refund for a reduction in hours due to individual course withdrawals is authorized. Only credit hour reductions effected by the drop/add process will generate a refund.

Students who withdraw from a course should be aware of the fact that a reduction in their course load because of withdrawal may affect their financial aid, HOPE eligibility, athletic eligibility, and/or full-time student status. Students should contact the appropriate office if they have questions about the impact of their withdrawal from a course. Students who are returning from academic dismissal are advised to consult with their academic advisor prior to withdrawal. Veterans and dependents of veterans who receive educational benefits must notify the Office of Veterans Education Benefits in the Registrar's Office of any course load reductions.

If a drop or a withdrawal is initiated by someone other than the instructor, the instructor and the student will be notified by the Registrar's Office that the student has been dropped or withdrawn from the class. If a student is withdrawn from a class, the instructor must be allowed the opportunity to provide a grade for the course.

No instructional unit shall drop a student for lack of a prerequisite after the end of one calendar week from the beginning of the term.

A grade of W signifies that the student was passing the course at the time of withdrawal. Such a grade, even if the course was withdrawn from for medical reasons, does not relieve the student from the regular probation and exclusion rules. For more information, see "Academic Probation" and "Academic Dismissal" on page 47.

Course Deletions

A course deletion refers to an administrative process whereby the course is removed from the student's record after the designated drop/add period and, if appropriate, a refund is generated. In order to have a course deleted from the student's record, it must be determined that the University is responsible for the student being in the course in error.

Course deletion requires a written student petition followed by the review and approval of the instructor of the course, the department head/program director, and the dean. Questions concerning course deletion should be directed to the dean's office of the student's school or college.

Credit for Elementary-Level Language Courses

University of Georgia students who have taken two years of a language in high school may not receive degree credit for the first elementary foreign language course, numbered 1001, in that language.

Students admitted to the University are expected to have met the College Preparatory Curriculum (CPC) requirement of two units of one foreign language. Students who have not met the CPC requirement may register for the elementary-level course to satisfy the requirement with the understanding that 1) the course will not satisfy degree requirements, 2) the course and grade will appear on the student's transcript, and 3) the grade awarded will be included in all grade point averages calculated.

Students may register for and receive degree credit for the first elementary foreign language course, numbered 1001, if they are not using the course to satisfy the CPC requirement and have not taken, or have taken only one year of, this language in high school.

Forfeiture of Course Credit

By registering for and receiving a grade in a course for which credit hours have already been granted, either by work at the University or by transfer, a student forfeits the previous credits in that course. All grades, however, will be included in the student's UGA cumulative average, if UGA credit, and in the overall average.

Military or Extra-Institutional Experience and Credit

United States Armed Forces Institute (USAFI) courses are not recognized by the University unless they are completed through an accredited institution which grants recognized college credit for same. Such courses are regular correspondence courses and are administered under the Cooperating College Program of USAFI.

Inquiries concerning in-service training should be directed to the Director of Admissions. Evaluations of this training will not be made until such time as the student is accepted for study on the University campus.

College Level Examination Program (CLEP) Tests

Credit may be granted in certain subject areas for satisfactory completion of the College Level Examination Program (CLEP) Tests. Students with prior credit in the field or a related field of the subject area involved will not be granted credit. The University administers these tests through the Testing and Evaluation Center. In general, they are also administered by the education officer on military posts or by centers established by the College Board, of which the University is one.

FINAL EXAMINATIONS

Final Examination Policy

A final examination schedule is published each semester by the Office of the Vice President for Instruction and a preliminary copy is printed in the official *Schedule of Classes* publication each term. No time and date departures from the examination schedule should occur without prior approval of the dean of the school or college and the Vice President for Instruction. Similar advance approval also must be obtained to administer standardized, departmental "mass" examinations to groups of students enrolled in the same course.

Although there are special courses where a final examination of the regular type may not be appropriate, each student must be provided the opportunity to stand for a final examination as part of the completion of a full instructional term. Each instructor has the authority to design and administer the final examination in whatever manner is appropriate. Additionally, the instructor has the authority to structure the course syllabus and content so that the final examination may be a summative evaluation of the entire term's work or a portion of the term's work.

Final Examination Schedule Conflicts

With the consent of the academic department, the individual faculty instructor has authority to manage students who have conflicts with the final examination schedule. A student with three final examinations scheduled within the same calendar day or two examinations at the same time may petition to reschedule one exam to a different time or day by contacting the Office of the Vice President for Instruction at Old College Room 203, 542-6358. If one of the conflicting examinations is a mass exam, then it will be rescheduled.

Policy on Mandatory Assignments, Tests, and Quizzes During Reading Days and the Final Instructional Day of a Course

Reading Days—Reading Days are designed to provide time for students to prepare for final examinations. No mandatory assignments scheduled for completion during the Reading Days, either for course work or extra-curricular or co-curricular activities, shall be given to students by University personnel. Exceptions for good cause can be made to this policy by the Vice President for Instruction. Nothing in this policy limits the ability of instructors to schedule optional study reviews for their students during these days.

Final Instructional Day—No tests or quizzes are to be administered on the final instructional day of a course, unless the course has not been assigned a final examination time slot by the University. For purposes of this policy, student presentations to the class in a seminar or graduate course shall not be considered a test or a quiz.

Admission to Course Examinations

Students who have not registered for the course will not be admitted to the final examination, and only under extraordinary circumstances will they be admitted to the examination unless they have attended at least 50 percent of the total class and laboratory exercises held in the course.

GRADES

Grading System

The grading system for the University of Georgia is as follows:

A	Excellent
B	Good
C	Satisfactory
D	Passing
F	Failure
WF	Withdrew, failing. This grade indicates that the student was permitted to withdraw from the course while doing unsatisfactory work. Withdrawal from a course under these circumstances is equivalent to a failure. This grade is included in the academic average.
I	Incomplete. This symbol indicates that a student was doing satisfactory work but, for non-academic reasons beyond his/her control, was unable to meet the full requirements of the course. If an I is not satisfactorily removed after three semesters, the symbol I will be changed to the grade F by the appropriate official.

W	This symbol indicates that a student was permitted to withdraw without penalty. Withdrawals without penalty will not be permitted after the midpoint withdrawal deadline of the semester (date to be specified in the *Schedule of Classes*) except in cases of hardship as determined by the appropriate official.
S	This symbol indicates satisfactory participation in certain required courses. Normally S grades are given in a limited number of professional, seminar, or graduate-level courses. Credit is included in hours earned. The grade is not included in the academic average.
U	This symbol indicates unsatisfactory performance in certain required courses in which S grades may normally be given. No credit is given. The grade is not included in the academic average.
V	This symbol indicates an audit. No credit is given. The grade is not included in the academic average.
K	This symbol indicates that a student was given credit for the course via a credit by examination program approved by the faculty; e.g., CLEP, AP, Proficiency, etc.
ER	This symbol indicates an error in reporting. ER's not removed by the end of the semester subsequent to their assignment will be converted to grades of WF.
NR	This symbol indicates that a grade was not received by the Registrar's Office in time for processing. The NR symbol will be replaced by a grade upon receipt of an official grade change form from the instructor.

The cumulative grade point average is based on all residence hours attempted at the University exclusive of S and U grades.

Conversion of Letter Grades to Grade Points

For purposes of computing grade point averages, letter grades are converted into numerical equivalents:

A	4.0	I*
B	3.0	S*
C	2.0	U*
D	1.0	V*
F	0	K*
WF	0	W*
		NR*
		ER*

*Not computed

Grade Reports

Grade reports will be mailed directly to students at their permanent address at the end of the semester grading period.

Minimum Grade Point Average

A minimum cumulative grade point average of 2.00 is required to meet all undergraduate graduation requirements. A student will not be approved for graduation if he or she has a grade of I which, when changed to a recorded grade, could cause the student's grade point average to fall below the minimum required for graduation. This policy applies to students for all degrees conferred by the University.

Change in Grades

A grade in a course recorded by the Registrar cannot be changed except in the following circumstances:

A symbol of I not removed after three semesters becomes an F.

A symbol of ER not removed after one semester becomes a grade of WF.

Any grade will be changed upon a written statement by the instructor that the grade was a factual error. All grade changes are subject to approval by the instructor's department head and the Dean's Office.

ACADEMIC HONORS

Graduation with Honors

The University awards degrees with honors to candidates who meet specified standards of academic excellence. In order to be considered for a degree with honors, a student must meet the following requirements:

1. Graduating seniors whose first matriculation at the University of Georgia occurred

in September 1977 or thereafter will be recommended for graduation with honors on the basis of their *overall* grade point average for all college-level work attempted. The overall grade point average or all-college average includes all work attempted at the University of Georgia as well as all college-level transfer work attempted prior to or subsequent to matriculation at the University. Respective standards are as follows:

HONORS DESIGNATION	REQUIRED OVERALL GPA
Summa cum laude	3.90
Magna cum laude	3.70
Cum laude	3.50

2. Graduating seniors whose first matriculation at the University of Georgia occurred between September 1975 and summer 1977 will be recommended for graduation with honors on the basis of their overall grade point average for all college-level work attempted. The overall grade point average or all-college average includes all work attempted at the University of Georgia as well as all college-level transfer work attempted prior to or subsequent to matriculation at the University. Respective standards are as follows:

HONORS DESIGNATION	REQUIRED OVERALL GPA
Summa cum laude	3.90
Magna cum laude	3.60
Cum laude	3.30

3. Graduating seniors whose first matriculation at the University of Georgia occurred prior to September 1975 will be recommended for graduation with honors on the basis of the grade point average and scholastic standards in effect at the time they first matriculated as listed in the 1973-75 and 1975-77 University Bulletin.
   a. Minimum of 60 semester hours in residence after reaching junior classification.
   b. Based on all credit attempted in the semester in which hours attempted equal a minimum of 60.
   c. All hours attempted in the final semester before graduation included.
   d. Respective standards as follows:

Summa cum laude	3.90
Magna cum laude	3.60
Cum laude	3.30

In order to qualify for honors graduation, a student must have a minimum of 50 semester hours in which a letter grade (A,B,C,D, or F) was assigned.

First Honor Graduate

Beginning with the August 1977 graduating class, each student completing a baccalaureate degree with an overall grade point average of 4.0 will be designated a First Honor Graduate.

Presidential Scholar and Dean's List

The University encourages excellence in scholarship and gives recognition to students whose work is superior by publishing the Presidential Scholar and Dean's Lists from each school or college at the end of each semester. To be named a presidential scholar, students must have achieved during the preceding semester a grade point average of 4.00, earned at least 12 hours (6 hours during summer semester) in courses numbered 1000 or higher, and received no unsatisfactory or incomplete grades. To be named to the Dean's List, students must have achieved during the preceding semester a grade point average greater than or equal to 3.50 but less than 4.00; earned at least 12 hours (6 hours during summer semester) in courses numbered 1000 or higher; and received no grades below a B, no unsatisfactory grades, and no incomplete grades.

Honor Fraternities and Societies

Several honor fraternities and societies at the University extend recognition to students on the basis of scholarship and good character. There are chapters of Phi Beta Kappa, Sigma Xi, Phi Kappa Phi, and many college, school, and departmental honor societies.

Honors Day

Honors Day was introduced to give public recognition to students who achieve high scholastic records. Undergraduate students who are in the first five percent of their classes, based on cumulative grade point averages, are included in the Honors Day program. This program is administered by the Office of the Senior Vice President for Academic Affairs and Provost.

GRADUATION REQUIREMENTS

Candidates for degrees must show that they have met all general University requirements for such matters as registration and payment of fees and special requirements of the college or school in which they have been registered.

Changes in graduation requirements shall not be made retroactively unless there is clear and compelling reason for doing so. Graduation requirements will be determined as follows:

a. The general university requirements stated in the Bulletin that is current at the time a student matriculates as an undergraduate or graduate student at the University will be the general University requirements which the student must meet for graduation.

b. Requirements imposed by colleges or free-standing schools for graduation will be determined by the Bulletin that is current at the time a student transfers to or enters the college or free-standing school.

c. Requirements for a major, a certificate program, or a minor will be determined by the Bulletin that is current at the time a student declares a major, a minor, or certificate program.

d. The University, a college or school, a department, or a certificate program may permit students who matriculate at the University or who enter a college/school or major under one set of courses or graduation requirements to elect for the requirements that have been instituted since students matriculated at the University or entered a college/school or major, minor, or certificate program.

e. Undergraduate students who have not been enrolled at the University for a period of five years or more may be subjected to different University, college or school, or department requirements than those which existed at the time of matriculation at the University or entry into a given college/school, major, minor, or certificate program.

Application for Graduation

Currently enrolled students pursuing undergraduate and professional degrees will have applications for graduation automatically generated based upon their having earned a specified number of hours toward their degree with a minimum number of these hours also having been earned in residence.

In general, students who are in the first semester of their final year of study will have applications for graduation generated for the following term. Since degree program hours vary among the schools and colleges, students should contact their respective dean's office during the first semester of their last year of study to ensure that graduation requirements will have been met on a timely basis.

Once applications for graduation have been generated, students may make changes to the expected date of graduation through OASIS by accessing the "Expected Graduation Term" as listed on the Student Registration Main Menu.

Commencement

The University holds three formal commencement ceremonies each year in May, August, and December for students scheduled to graduate at the end of the spring, summer, and fall semesters, respectively. Diplomas will be mailed to students approximately 6-8 weeks following graduation. Students are responsible for maintaining a current home address or informing the Registrar's Office of a diploma mailing address.

The University reserves the right to withhold the degree of any student who has completed all academic requirements when disciplinary charges are pending or when there is a pending disciplinary action equivalent to suspension or expulsion.

STUDENT EDUCATION RECORDS

The federal Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. They include the following:

(1) The right to inspect and review the student's education records, subject to certain specific exceptions. A student wishing to review his/her education records should submit to the registrar, academic dean or other appropriate official a written request that identifies the records he/she wishes to inspect. The University official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official will advise the student of the correct official to whom the request should be addressed.

(2) The right to request the amendment of the student's education records. A student may ask the University to amend a record that he/she believes is inaccurate or misleading. The student should write the University official responsible for the record, clearly identifying the part of the record he/she wants changed and specifying how it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his/her right to a hearing as well as the hearing procedures.

(3) The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without the student's consent. One exception is disclosure to other University officials who have been determined to have a legitimate educational interest in the information. A University official is a person employed by the University in an administrative, supervisory, academic, research, or support staff position; a person or company with whom the University has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Regents of the University System of Georgia; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another University official in performing his/her duties. A University official has a legitimate educational interest if the official needs to review an education record in order to perform his/her official duties.

Upon request, the University also discloses education records without the student's consent to officials of another school in which a student seeks or intends to enroll. In addition, directory information may be disclosed without a student's consent unless the student has advised the registrar in writing that he/she wishes to restrict access to this information. "Directory Information" includes the student's name, address, telephone listing, e-mail address, date and place of birth, major field of study, participation in officially recognized activities and sports, dates of attendance, degrees and awards received and the most recent previous educational agency or institution attended by the student, as well as the weight and height of members of athletic teams.

(4) The right to file a complaint with the U.S. Department of Education concerning the University's alleged failure to comply with FERPA. The name and address of the office that administers FERPA is Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, S.W., Washington, D.C. 20202-4605.

Copies of the complete University policy statement regarding FERPA may be obtained from the Office of the Registrar.

Name Changes

The name carried on the permanent academic record is the name given on the application for admission and should be the complete legal name. The name will be changed by the Registrar upon request to reflect legal name changes.

ACADEMIC PROBATION

University-wide regulations provide that students are placed on academic probation at the end of any term in which their UGA cumulative average is below 2.00. Students may remove themselves from academic probation by achieving a 2.00 UGA cumulative average. Transfer credits are not included in the computation of the UGA cumulative average.

Some schools and colleges within the University maintain academic standards specific to their degree requirements which may exceed University regulations. Students who fall below such standards should immediately contact the appropriate officer in their respective dean's office for academic counseling and program evaluation.

Admission to Another College or School While on Probation

A student on probation or on first dismissal in one college or school within the University may not transfer to another college or school without the consent of the dean of the college to which admission is sought.

ACADEMIC DISMISSAL

Undergraduate students are subject to the retention standards listed below based upon the date of their initial enrollment at the University of Georgia.

I. Students whose first enrollment at the University occurred the summer quarter 1980, or thereafter, will be dismissed after two successive terms of probation (either semester or a combination of quarter and semester) if their UGA cumulative average is below that required for a designated number of total hours attempted as follows:

Total Semester Hours Attempted	*Required Minimum UGA Cumulative Average*
00-20.9	1.60
21.0-39.9	1.70
40.0-59.9	1.80
60.0-79.9	1.90
80.0 and above	2.00

II. Students whose first enrollment at the University occurred prior to the summer quarter 1980 and who have been enrolled at the University for a minimum of three quarters or two semesters will be dismissed if their UGA cumulative average is below that required for a designated number of total hours attempted, as follows:

Total Semester Hours Attempted	*Required Minimum UGA Cumulative Average*
00-29.9	1.50
30.0-59.9	1.60
60.0-89.9	1.70
90.0-119.9	1.80
120.0-159.9	1.90
160.0 and above	2.00

III. Students who are required by the institution to enroll in Academic Assistance courses are allowed three attempts to complete a program area (English, math, reading, and counseling). According to Board of Regents' policy, students who have not met the criteria for completion after three attempts will be placed on academic dismissal from the University for a period of three years regardless of their total hours attempted and UGA cumulative average.

The following policies are used to determine a term of probation, a term of enrollment, total hours attempted, and minimum enrollment requirements:

1. A probationary term is the term of enrollment subsequent to the one in which the student's UGA cumulative average fell below 2.0. Grades earned in courses for which the student received transfer credit are not included in the computation of the UGA cumulative average.
2. Students will be considered enrolled for any term during which they receive a grade or grades other than W or V.
3. Total Hours Attempted include all hours attempted at the University plus all hours transferred to the University with the following exceptions:
   a. Hours in courses with grades of I, W, V, NR, and ER are not counted.
   b. Hours in courses that are numbered less than 1000 are not counted, e.g.,

Academic Assistance courses, Regents' Remediation courses.

Note: Total hours attempted as defined above reflect hours used for probation/dismissal calculations and are not necessarily synonymous with HOPE Scholarship hours attempted.

4. Students will not be subject to dismissal if they meet the applicable retention standards listed above at the end of their most recent term of enrollment.
5. If students do not meet the applicable retention standards listed above at the end of their most recent term of attendance, they may be continued on probation provided they were enrolled for a minimum of 9 semester hours (6 semester hours during summer semester) and earned a term average of 2.30 or higher. The following policies apply in the computation of the minimum enrollment requirement:
   a. These hours must be in courses numbered 1000 or above that are graded A-F exclusively.
   b. Courses in which grades of W, V, I, S, U, NR, or ER are received do not count toward these hours.

First Dismissal

Upon a first academic dismissal, a student may not re-enroll in the University until a full fall or spring semester has elapsed. Each student upon first dismissal will be informed by his or her school or college of procedures and standards that will be applied for readmittance.

Second Dismissal

After a second academic dismissal, students will be suspended from the University for a minimum of one calendar year. At the end of the suspension, permission to return to the University can be granted only by appealing to the University Educational Affairs Committee.

POLICY ON ACADEMIC RENEWAL

University of Georgia degree-seeking, undergraduate students who have been readmitted after a period of absence of at least five calendar years from any postsecondary institution are eligible to petition for Academic Renewal. Exceptions may be made if the student requesting academic renewal was advised by his/her school or college to complete coursework elsewhere. If approved, Academic Renewal will initiate a new grade point average that will be used in the determination of a student's academic standing. This policy allows University of Georgia degree-seeking students who earlier had experienced academic difficulty (probation, continued probation, or dismissal) to make a fresh start and have one final opportunity to earn a bachelor's degree.

The following general statements will apply to students who seek Academic Renewal status.

1. Students who wish to apply for Academic Renewal must submit a petition to the Educational Affairs Committee through the Office of Vice President for Instruction, Room 210, Old College. This petition may be submitted at the time of readmission but no later than the end of two semesters of re-enrollment or one calendar year following re-enrollment, whichever comes first. The Academic Renewal GPA begins the semester of re-enrollment. A student may be granted Academic Renewal status only one time. If a student granted Academic Renewal does not enroll for the semester for which Academic Renewal status is sought, the student must reapply for Academic Renewal.
2. Former Developmental Studies or Academic Assitance students may apply for Academic Renewal only if they successfully completed all Developmental Studies or Academic Assistance requirements prior to the beginning of the five-year period of absence.
3. The granting of Academic Renewal does not supersede institutional financial aid policies governing Satisfactory Academic Progress and does not supersede the admissions requirements of certain programs, e.g., teacher education, that require a specific minimum grade point

average based on all coursework. Reentry into any academic program is not automatic.

4. Any scholastic dismissals that occurred in the past shall remain on the student's permanent academic record. If the student encounters subsequent academic difficulty after having been granted Academic Renewal, the next dismissal would subject the student to permanent exclusion.

Implementation Procedures

1. Renewal Grade Point Average
   An Academic Renewal GPA (AR GPA) will begin when a student who has been granted Academic Renewal status resumes taking coursework. A statement will be placed on the student's transcript indicating that Academic Renewal status has been granted. All previously attempted coursework will continue to be recorded on the student's official academic record. The Renewal GPA will be used for determining academic standing and eligibility for graduation, although eligibility for graduation with honors will continue to be based on the student's overall grade point average.
2. Degree Requirements for Academic Renewal Students
   Academic credit for previously completed coursework--including transfer credit--will be retained only for courses in which grades of A, B, C, S, or K have been earned. Courses with D grades must be repeated if they are required in the student's degree program. Retained grades are not calculated in the Academic Renewal GPA but are counted in the Academic Renewal Hours Earned.

   To earn a degree from the University of Georgia, a student must meet the institution's residency requirement, i.e., the student must complete 40 of the last 60 hours in residence, plus 12 of the semester hours required for the major must have been earned in residence. Retained credit hours earned prior to Academic Renewal Status may be used in partial satisfaction of the residency requirement.

   General degree requirements satisfied prior to the granting of Academic Renewal, such as the U.S. and Georgia History and Constitution requirements, will remain on the student's permanent record even though the courses used to satisfy these requirements may not have been retained.

   The Academic Renewal Hours Earned, i.e., those hours retained prior to the granting of Academic Renewal status, plus any hours earned following renewal shall be used in determining the applicability of any requirements that specify a number of hours earned, such as the Regents Test, College Preparatory Curriculum, etc.

WITHDRAWAL FROM THE UNIVERSITY

Students who wish to withdraw from the University after the first day of classes for a term should request the withdrawal option in OASIS (Online Access to the Student Information System). Veterans or their dependents receiving allowances under acts of Congress must notify the Veterans Education Benefits Office. Refunds will be based on the date of such notification.

A student against whom disciplinary charges are pending will not be permitted to withdraw from the University with a clear record until such charges shall have been resolved.

In general, a student voluntarily withdrawing may return later if scholastically eligible.

Student Affairs

The Division of Student Affairs of the University of Georgia supports and complements the academic mission by providing services and programs that contribute to learning and development by assisting students to understand and utilize academic resources; plan and prepare for their life work; learn to know, live and work with, appreciate, and enjoy others; maintain mental and physical health; and integrate personal, professional, and social values.

Office of the Vice President for Student Affairs

The Office of the Vice President for Student Affairs is a focal point for student concerns in an effort to make the educational experience as meaningful as possible. Staff members work to maintain and improve communications and cooperation among students, faculty, and administrators and offer students general advisement, referrals, and information. Leadership, coordination, and budgetary supervision for the Division of Student Affairs are provided by the Vice President.

The Division of Student Affairs provides many programs and services designed to enhance a student's educational experience at the University of Georgia. Departmental staff members work directly with students and other members of the University community to make these services available. The Vice President for Student Affairs has administrative responsibility for nine departments: Counseling and Testing Center, Dean of Students Office (which includes Greek Life, Judicial Programs, Leadership Development Programs, and Minority and Services Programs), Disability Services, Recreational Sports, Student Activities, Student Financial Aid, Student Life Studies, University Health Center, and University Housing.

The Office of the Vice President for Student Affairs collaborates with the College of Education in the training of graduate students and is the liaison between the Campus Ministry Association and the University community. Response to student crisis situations and the Student Affairs Development Program are coordinated through this office, (706) 542-3564.

CAMPUS MINISTRY ASSOCIATION

Students may participate in the religious programs of Athens churches and in student organizations sponsored by all major faiths, denominations, and inter/non-denominational organizations. Many of these maintain student religious centers and are members of the Campus Ministry Association. These include: Baptist Student Union, Bulldog Christian Fellowship, Campus Crusade for Christ, Catholic Center, Chi Alpha Christian Fellowship, Christian Campus Fellowship, Christus Victor Lutheran Church, The Church of Jesus Christ of Latter-Day Saints' Institute of Religion, Episcopal University Center, Georgia Christian Student Center, Hillel Foundation (Jewish Center), Methodist Center (Wesley Foundation), Presbyterian Center, Unitarian-Universalist Campus Ministry, Worldwide Discipleship Association, and Young Life. Religious Affairs Liaison: 201 Holmes/Hunter Academic Building, (706) 542-3564.

Counseling and Testing Center

The Counseling and Testing Center, located in Clark Howell Hall, provides a wide range of services designed to help students adjust to and succeed in the university environment. Service options include Career Services (assistance with choice of major or career direction), Personal Counseling Services (individual, couples, and group counseling), Outreach and Consultation Services, and Testing Services.

PERSONAL COUNSELING SERVICES

The Counseling and Testing Center offers group and individual counseling for students who may be experiencing varying types of concerns related to the changes brought on by the transition to college. All counseling services are provided on a confidential basis.

Individual Counseling: Individual counseling services at the Center are generally offered to currently enrolled students on a short-term basis ranging from a few weeks to a few months, depending on the nature of the student's concern. Self-esteem, stress management, depression, family issues, anxiety, and interpersonal relationships are among the concerns commonly discussed in personal counseling. For longer term or more specialized services, options may include on-campus or off-campus referrals. Students interested in receiving individual counseling are invited to come by the Center for additional information.

Group Counseling: The Center offers a variety of different groups each semester. The groups may assist students in developing interpersonal skills such as assertiveness, stress management, or relationship enhancement. In addition, groups are available for students interested in discussing or gaining support for personal concerns. Topics that this type of group may address include family issues, self-confidence, interpersonal relationships, women's concerns, and minority group concerns. Depending on the topic, groups may meet for a limited number of weeks during the semester or for as long as a full academic year. Each semester, groups are advertised on flyers that are distributed throughout campus and in *The Red and Black.*

Career Counseling: The Center offers in-depth career counseling services for students who find they continue to need assistance in defining a major or career direction following their initial contact with Career Services. Students may also find they would like to address personal issues which may interfere with their choice of major or career direction. Center professional staff are trained and welcome the opportunity to assist students with personal or career issues. The Center continues to offer the course ECHD 2050, Choosing a Major and Career Goal, and maintains a Career Information Center with current career information specifically designed for the undecided student.

OUTREACH AND CONSULTATION SERVICES

Each term the Center offers a number of workshops and programs on topics related to personal growth and development. The "Lunch and Learn" series is advertised on flyers distributed throughout campus and in *The Red and Black.* Topics for these programs have included increasing self-esteem, managing stress, communication skills, career issues, maintaining healthy relationships, and interpreting dreams. In addition to these scheduled workshops, student organizations, residence halls, classes, and other campus groups can request similar programs at times convenient to the group's needs. As an additional service, Center staff are available to provide consultation services to campus departments and organizations.

TESTING SERVICES

The Center is responsible for the administration of university-wide testing programs, including the Regents', U.S. and Georgia Constitution and history tests, Orientation testing, proficiency and entrance testing, language placement testing, and Independent Study exams. Hours are limited and appointments are required for some of the testing programs. Test dates and registration instructions for the group administrations of selected programs are provided in the OASIS registration system and in the *Schedule of Classes* each term. The Center also administers numerous national testing programs such as the GRE, GMAT, MAT, MCAT, CLEP, LSAT, TOEFL, SAT, and GED. Computer Based Testing (CBT) is available for the GRE, GMAT, PRAXIS I, and TOEFL. Information and registration packets for national testing programs can be obtained from the lobby of Clark Howell Hall. Further information regarding testing may be obtained by contacting the Center's testing information line at 542-TEST (8378).

Students are encouraged to take full advantage of the resources that are offered at the Counseling and Testing Center by visiting the Center, Clark Howell Hall (first floor, south wing), to access available services or by calling 542-3183 for general information and 542-TEST (8378) for testing information.

Dean of Students

The Dean of Students, Dr. Rodney Bennett, serves as the primary liaison between students and University administration. The Office of the Dean of Students (DOS) falls under the Division of Student Affairs and Vice President Mullendore. It comprises four program units: Greek Life, Student Leadership and Development, Minority Services and Programs, and Judicial Programs. The office of the Dean of Students is available for students from the time they arrive on campus until after their graduation day. The objective of the Dean is to identify and meet the needs of special populations through ongoing programs, activities, and advising. The staff of the department serve as student advocates to ensure that those populations with special needs become and remain an integral part of the campus community. By definition, the Dean of Student's objective is to enable students to realize their fullest potential. The department works to enhance the overall quality of campus life, establish a sense of community, and encourage students to assume active roles in pursuing their educational, personal, and career goals. Above all, it gives guidance and support to help students accomplish these goals. For more information, contact the Office of the Dean of Students, 205 Memorial Hall, at 542-6262.

MINORITY SERVICES AND PROGRAMS

The mission of the Office of Minority Services and Programs is to enhance the university environment by promoting student leadership and academic achievement, to celebrate the contributions and heritage of UGA's diverse student body, and to encourage the full participation of African American, Hispanic American, Asian American, and Caribbean American students, faculty, and staff in campus life. The goals of the Office of Minority Services and Programs are to promote leadership development, resource awareness, academic success, and multi- culturalism.

The office also houses the *African American Cultural Center*, a functional area within the office of MSP. The cultural center provides a venue where students of the African Diaspora can network with one another, meet new people, learn about cultural heritage and traditions, display their talents, and implement programs.

The office specifically advises the following student organizations:

The Black Affairs Council (BAC) is an organization dedicated to assisting the University in meeting the needs of the African American student population. The organizational mission is twofold: (1) to identify specific needs, problems, or concerns for the University administration and (2) to develop and implement strategies to address identified needs.

The Pamoja Dance Company provides an outlet for non-dance majors to express themselves through dance. Pamoja is open to any interested students. Concerts are held throughout the school year. Dance forms include jazz, ballet, modern, hip hop, lyrical, African, and tap.

The Black Theatrical Ensemble (BTE) is an African-centered theatrical group for students interested in gaining experience and exposure to acting, directing, writing, and the production of commercials as well as original plays and works of African American playwrights. BTE is open to any student seeking this form of expression.

The Black Educational Support Team (BEST) assists and orients new and transfer students to campus life. The purpose of this program of peer helpers/friends is to help lessen the stress and strain of college life. The peer also serves as an information source and referral agent for these students.

The Asian American Student Association (AASA) is a group devoted to promoting Asian history and culture on campus and in the community and to assist in the academic success of its members.

The Hispanic Student Association (HAS) sponsors numerous activities to recruit and retain Hispanic students at UGA. HAS also contributes to the University's diversity by hosting an annual Hispanic Awareness Week and co-sponsoring activities with other student groups.

The Indian Cultural Exchange (ICE) is a group dedicated to promoting the rich culture and history of students on campus and in the community whose cultural background is from India by sponsoring various educational programs and events.

Infusion Magazine is a publication for students, faculty, and staff of color to share their thoughts, opinions, and facts.

The Abeneefoo Kuo Honor Society (ABK) is a community service and leadership organization. African American students with a 3.0 or above GPA are inducted each semester.

To obtain additional information, contact the Office of Minority Services and Programs, 404 Memorial Hall, (706) 542-5773.

STUDENT LEADERSHIP DEVELOPMENT PROGRAMS

The Office of Student Leadership Development Programming strives to develop responsible campus and community leaders and citizens through the use of leadership education and experiential learning opportunities. Programs including The Big Event, the T.O.P. Dog Program, the LeaderShape Institute, the Spring Leaders Conference, Leadership UGA, the Leadership Resource Team, and the Leadership Resource Center. Through these programs, students learn the skills necessary to serve their organizations, professions, and communities. The following are descriptions of programs offered by this office:

The BIG Event (Busily Involved at Georgia) is an opportunity for first year students to spend a few exciting days with 200 other incoming freshmen before classes begin in the fall.

Leadership UGA - Forty juniors and seniors participate in a series of seminars designed to introduce current issues facing the nation. Prominent leaders from throughout the state are invited to meet with the students to define the issues and their efforts to respond.

Leadershape Institute – a nationally known, week-long retreat for campus leaders that focuses on leadership programs.

Leadership Resource Team – A group of 25 students whose main focus is to act as consultants to student organizations by providing programs on leadership topics at their request.

T.O.P. Dog – Training Organization Professionals, is a series of programs designed to give students the opportunity to form relationships with campus administrators and corporate representatives.

Spring Leaders Conference – This conference is aimed at bringing together student leaders from throughout the state of Georgia.

The Arch Society - The purpose of the Arch Society is to provide a core of students to act as official hosts for appropriate functions at the University of Georgia.

For more information, contact the Office of Student Leadership Development Programs, 225 Memorial Hall, (706) 583-0830.

JUDICIAL PROGRAMS

The University of Georgia has as its primary mission the development of an intellectual community within an environment which fosters respect and integrity among its members. In order to facilitate the desired environment and educational goals of UGA and to protect the rights and privileges of its students, the University has conduct regulations for individuals and organizations and has established a judicial process. As members of the University community, students have a responsibility to know and follow the University conduct regulations. By adhering to the codes of conduct represented in the three Pillars of the Arch, students can enjoy their own rights while respecting others' rights. As a part of its mission, the Office of Judicial Programs also advises the following student organizations:

The University Judiciary is made up of members of the student body who act as either advocates or advisors during each student hearing.

The Judiciary Outreach Team (J.O.T) is composed of members of the University Judiciary who are dedicated to outreach and educating the University community on policies and procedures.

For more information, contact Judicial Programs, 130 Memorial Hall, (706) 542-1131.

GREEK LIFE

Social fraternities and sororities are an established tradition at the University of Georgia, dating back more than 150 years. There are currently 48 national Greek-letter men's and women's groups. The self-governing, self-supporting bodies of the fraternities and sororities are the Panhellenic Council, the Interfraternity Council, and the National Pan-Hellenic Council. These groups coordinate events, provide educational programs, establish community wide regulations, and implement legislative policies for their member organizations.

The mission of the Greek Life Office (GLO) is to provide educational initiatives designed to challenge, support, and recognize individuals and groups associated with Greek organizations through leadership training, academic support, community service and philanthropy, and diversified programming.

The following organizations are supported by the Greek Life Office:

Fraternities

Alpha Epsilon Pi
Alpha Gamma Rho
Alpha Kappa Lambda
Alpha Phi Alpha
Beta Theta Pi
Chi Phi
Delta Chi
Delta Tau Delta
Kappa Alpha
Kappa Alpha Psi
Kappa Sigma
Lambda Chi Alpha
Phi Beta Sigma
Phi Delta Theta
Phi Gamma Delta
Phi Kappa Psi
Phi Kappa Tau
Pi Kappa Alpha
Pi Kappa Phi
Sigma Alpha Epsilon
Sigma Chi
Sigma Nu
Sigma Phi Epsilon
Sigma Pi
Tau Epsilon Phi
Tau Kappa Epsilon
Theta Chi

Sororities

Alpha Chi Omega
Alpha Delta Pi
Alpha Gamma Delta
Alpha Kappa Alpha
Alpha Omicron Pi
Chi Omega
Delta Delta Delta
Delta Gamma
Delta Phi Epsilon
Delta Sigma Theta
Delta Zeta
Gamma Phi Beta
Kappa Alpha Theta
Kappa Delta
Kappa Kappa Gamma
Phi Mu
Pi Beta Phi
Sigma Delta Tau
Sigma Gamma Rho
Sigma Kappa
Zeta Phi Beta
Zeta Tau Alpha

Disability Services

The mission of Disability Services is to create an accessible academic, social, and physical environment for students with disabilities at the University of Georgia. Disability Services seeks to eliminate attitudinal barriers that exist on campus and serves as an advocate for students with disabilities. It also encourages students to develop independence and responsibility as they participate in university life.

Disability Services provides services to students who have either a physical or mental impairment which substantially limits one or more major life activities, i.e., ADD/ADHD, cerebral palsy, hearing impairments, psychological disorders, quadriplegia, acquired brain injuries, cardiac disease, deafness, and blindness. To qualify for services, students must have a verifiable disability by providing current documentation from a qualified health professional.

Disability Services provides a variety of academic and support services to ensure equal access to University programs and activities. It also provides assistive devices and state-of-the-art adaptive computer equipment specifically designed for people with disabilities.

Centrally located on the first floor of Clark Howell Hall, Disability Services is open Monday-Friday from 8:00 a.m. to 5:00 p.m. For more information, call (706) 542-8719 or visit our web site at: *www.dissvcs.uga.edu/.*

Recreational Sports

The University encourages interest in sports and fitness by affording students opportunities to be participants and spectators in a variety of intramural sports, outdoor recreation experiences, club sports, fitness classes, and informal sports.

The intramural program includes flag football, volleyball, sand volleyball, badminton, basketball, softball, golf, bench press, swimming, tennis, indoor soccer, outdoor soccer, and racquetball. The Georgia Outdoor Recreation Program offers backpacking, whitewater rafting, caving, horseback riding, and canoeing experiences, among others.

Club sports are student-run organizations which offer competition and instruction in their particular sport. Currently, students have organized rugby, soccer, Tae Kwon Do, lacrosse, and ultimate frisbee, among others.

The fitness and instructional program offers a wide variety of aerobics and activity classes. The aquatics program offers hydrobics and swim lessons.

Sports and recreation facilities available for student use include the new Ramsey Student Center for Physical Activities (4 gyms, swimming pools, weight training/conditioning room, racquetball and squash courts, multi-purpose and martial arts rooms, indoor track, climbing alcove), 37 acres of playing fields, 22 outdoor and 4 indoor tennis courts, and the beach and beach house at Lake Herrick. Ramsey Student Center for Physical Activities, 330 River Road, (706) 542-5060.

Student Activities

The Department of Student Activities seeks to enhance the educational experience for all students and to help build a sense of campus community through a wide variety of programs and services for individuals and for student groups. The Department of Student Activities is a primary contact point for students through 500 registered student organizations, student programming groups (such as the University Union), student volunteer services (Communiversity), International Student Life, *Pandora* yearbook, student-run radio station (WUOG 90.5 FM), All Campus Homecoming, College Bowl, and National Student Exchange.

Facilities and services available through the department in the Tate Student Center and Memorial Hall include an information desk; study and TV lounges; meeting, conference, and multipurpose rooms; a movie theater; student organization offices and message center; business office, ticket sales, UGACard office, and cashier; a printing, copying, and graphics operation; a gameroom; van rentals; and technical support and equipment rental for campus events. The Tate Student Center houses the Bulldog Cafe, Dawg Snacks Concessions, and a post office. The department also operates Legion Pool, an outdoor swimming facility, and the adjacent Legion Field, an outdoor program and event facility. For more information, see the Student Activities website at: *www.uga.edu/stuact/* or contact the Department of Student Activities at 325 Tate Student Center, (706) 542-7774.

STUDENT ORGANIZATIONS

A large number of professional and honorary organizations, fraternities and sororities, honor societies, advocacy, international, recreational, and service groups exist on the University campus. A detailed listing of nearly 500 organizations is available from the Department of Student Activities in the Tate Student Center, (706) 542-7774.

STUDENT COMMUNICATIONS

The *Pandora* (yearbook) and WUOG-FM (student radio station) are administered through the Department of Student Activities, (706) 542-7774. *The Red & Black* is an independently-produced student newspaper.

INTERNATIONAL STUDENT LIFE

The International Student Life Office encourages both international and American students to participate in cross-cultural programs and international activities at UGA. Students are invited to become World Ambassadors and participate in such international and intercultural programs as The Interactions Newsletter, International Coffee Hour (every Friday), International Street Festival and other diverse programs to promote active interaction among Americans and internationals. The office also provides new student orientation programs for international students at UGA every semester, including individualized advising and housing assistance. International Student Life's mission is to support UGA's goal of providing an environment that appreciates our interdependent global society. By working with students to create a welcoming space that provides opportunities for the interactions of students from the USA and other nations, the International Student Life staff provide services for, awareness of, and education about the worldwide social and cultural issues facing UGA students. The office Web site address is: *www.uga.edu/isl* or contact the International Student Life Office, 210 Memorial Hall, (706) 542-5867.

NATIONAL STUDENT EXCHANGE

Through its membership in the National Student Exchange consortium, the University of Georgia has a partnership with over 150 colleges and universities throughout the United States and its territories to provide students with exchange opportunities. Students on NSE exchange attend the host campus for one or two terms during the academic year, while paying UGA tuition and fees. There are only a few eligibility requirements, and the deadline for applying for the next year is the end of February, although early application is encouraged.

National Student Exchange offers students the means to experience new life and learning styles, appreciate differing cultural perspectives, learn more about themselves and others, and broaden their educational background through specialized courses or unique programs that may not be available on the home campus. Living and studying in another state or region of the United States is a valuable opportunity to widen educational horizons.

For more information, NSE Directories, and applications, students should visit the NSE Office in the Department of Student Activities, 325 Tate Student Center. Contact: (706) 542-7774 or nse@arches.uga.edu.

Student Financial Aid

Student financial aid is the assistance available to help students meet the difference between what they can afford to pay and what it actually costs to attend the University of Georgia. The amount a student and family can afford to contribute will be determined by the University of Georgia's Office of Student Financial Aid (OSFA), employing a uniform need analysis system in accordance with federal guidelines. The process of establishing the amount of eligibility for financial assistance for a student is based on two major components: Cost of Attendance (reasonable comprehensive costs for an enrollment period), and Total Family Contribution (as determined by a need analysis system).

AID APPLICATION PROCEDURES

Students begin the aid application process by completing the Free Application for Federal Student Aid (FAFSA). Students may review specific policies and program descriptions at *www.uga.edu/osfa*. Most students who received aid the previous academic year will receive a PIN booklet directly from the Federal government which provides information on how to complete the FAFSA on-line. New students should go to *www.fafsa.ed.gov* for the electronic version of the FAFSA. If a paper version of the FAFSA is needed you may contact OSFA and one will be mailed to you. By completing the FAFSA, a student will be considered for federal, state, and institutional aid, including the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal Work-Study, HOPE Scholarship, Student Incentive Grant, Federal Direct Loans, and scholarships administered by the Office of Student Financial Aid.

Students who are interested in the HOPE Scholarship and do NOT wish to be considered for federal student aid may complete the Electronic HOPE application (eHOPE) which is available at *www.gsfc.org/ehope*. The eHOPE is the only application required for a HOPE applicant and it is necessary to complete it only once during the college career.

To be considered for student financial aid, you must:

1) be a United States citizen or eligible non-citizen of the United States; and,
2) have been accepted for admission to an approved degree-seeking program or Teacher Certification program by the Office of Undergraduate Admissions or the Office of Graduate Admissions; or be currently enrolled in an approved degree seeking program or Teacher Certification Program (students whose degree program status changes should contact OSFA); and,
3) be making progress toward the completion of your course of study according to the “Satisfactory Academic Progress Policy for Student Financial Aid Recipients”; and,
4) not be in default on a Guaranteed Student/Federal Stafford Loan, Federal Direct Loan, Federal Parent (PLUS) Loan, Federal Direct Parent (PLUS) Loan, Federal Supplemental Loan, National Direct/Defense Student Loan, Federal Perkins Loan, Health Professions Loan, Income Contingent Loan, or Federal Consolidation Loan received at any institution; and
5) not owe a refund on a Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, or Student Incentive Grant received while attending any institution.

All graduate and undergraduate students must complete the Free Application for Federal Student Aid (FAFSA) application process in order to receive federal or state aid. The only exception is for students who are applying for the HOPE Scholarship ONLY. Questions should be directed to the Office of Student Financial Aid (OSFA) at 706/542-6147 or for clarification. (**DO NOT** submit the paper federal Student Aid Report to OSFA unless you have corrections to be processed.) The Federal Processor electronically submits your Student Aid Report (SAR) to OSFA if you have listed UGA as a school to receive the information. This will be used to determine your eligibility for aid which includes the Federal Pell Grant, Federal Perkins Loan, Federal Work-Study, Federal Supplemental Educational Opportunity Grant, Federal Direct Loans, Federal Direct Parent (PLUS) Loan, etc.

STUDENT FINANCIAL AID POLICIES

Applications for the coming academic year are available in January. For priority processing, your FAFSA must be mailed or electronically submitted to the Federal Processor by 1 March 2002. Applications submitted later will be processed as time and funds permit. OSFA will begin processing completed applications for the 2002-03 academic year as soon as tuition rates are determined by the Board of Regents. Processing can take six weeks or longer during peak processing time. Applications that are incomplete by the following dates may not be processed by the beginning of that semester: Fall, 1 August 2002; Spring, 1 December 2002; Summer, 1 May 2003. If your application process is not complete by the dates given you should be prepared to pay **ALL** educational costs. Do not expect to have student financial aid available if you have not returned your signed Award Letter to OSFA **AND** have not returned a correctly completed Federal Direct Loan Promissory Note (if required) by the listed dates.

When completing the FAFSA, **ALL** required items must be answered. Failure to do so may delay your Award Letter.

Use your full legal name when applying for aid. Do not use nicknames, abbreviations, or middle names as first names. The U. S. Department of Education requires that the name used when applying for aid match your name on Social Security Administration records. You will be asked for other information if there is a conflict.

The U.S. Department of Education defines "professional student" as a student enrolled in a course of study beyond a Bachelor's degree. Bachelor's degree students enrolled in the Bachelor of Forest Resources, Social Work, and Journalism degree programs are not professional students for the purpose of applying for student financial aid. However, Doctor of Pharmacy and Doctor of Veterinary Medicine students meet the Department's definition of professional students.

Each year OSFA receives requests for more funds than are available. Although Federal Pell Grant and Federal Direct Loans are available to eligible students year-round, other funds are awarded to eligible students on a first-come, first-served basis.

OSFA uses your **permanent** home address on file in the Registrar's Office. You may update this address in OASIS, or complete a change of address form in the Registrar's Office in the Holmes/Hunter Academic Building. According to official University policy, e-mail is a mechanism for official communication for the University. All students who have access to e-mail must register a preferred e-mail address for official University communications. Many of our communications will be switching from paper to e-mail; therefore, it is critical that a correct e-mail address be maintained in University records.

OSFA reserves the right, on behalf of the University, to review and cancel awards at any time if you fail to meet the requirements of the Satisfactory Academic Progress Policy for Student Financial Aid Recipients or because of changes in your financial or academic status, academic program, resident status, enrollment status, etc. All student financial aid awards are contingent upon the availability of funds.

Only the first thirty attempted semester hours of non-degree undergraduate credit course work (including mandatory Academic Assistance) will be allowed in determining aid eligibility. Neither voluntary Academic Assistance nor audits will be considered in determining aid eligibility.

Aid is awarded on information provided on the FAFSA. If you plan to enroll Summer 2003 and want to be considered for Summer aid, indicate that on the FAFSA. Students who plan to first apply for aid in the Summer of 2003 must mail the FAFSA in time for it to **reach** the Federal Processor by 1 July 2003. No aid can be awarded if this deadline is missed. If the semester(s) for which you are requesting aid has ended AND you are no longer enrolled, you will usually not be eligible for aid. If you are in verification when the semester ends, you MAY be eligible to receive aid when verification is complete. Federal Direct Loan processing deadlines may require loans to be processed before the last day of class. Contact OSFA if you have questions.

The number of hours required for federal student financial aid recipients for full time and half time enrollment during the 2002-03 school year are not necessarily those of the University. You should check with OSFA any time that you are considering withdrawing below 6 hours if undergraduate and 5 hours if graduate status.

If you receive a Federal Direct Loan or your parent receives a Federal Direct Parent (PLUS) Loan, you must maintain at least half time enrollment at all times (see Full Time/Half Time Enrollment section). Dropping below half time enrollment at any time may result in subsequent loan disbursements being canceled. If you later re-enroll at least half time, you must contact OSFA to confirm your loan status.

Your official UGA enrollment status is determined each term at the end of Phase III (Drop/Add) Registration. If you enroll full time, receive aid, and then drop to less than full time during Phase III Registration, you will be asked to repay aid.

Dropping a class during the official Drop/Add period each term will result in a review of aid eligibility for that term. Hours which are dropped do not count toward HOPE eligibility or Satisfactory Academic Progress standards, although repayment may be required if student aid has already been disbursed for those hours. No grades are posted for dropped hours. Hours from which you withdraw each term will be considered as enrolled/attempted hours for purposes of determining HOPE eligibility and Satisfactory Academic Progress standards. Withdrawing from a course will result in a grade of W or WF.

All students, including transfer students, are urged to carefully review the Satisfactory Academic Progress Policy for Student Financial Aid Recipients found at www.uga.edu/osfa.

Irregular, non-degree, transient, unclassified post-graduate, and provisional students are generally not eligible for federal or state student financial aid. HOPE scholarship recipients may contact OSFA to request information on receiving HOPE as a transient student at another HOPE eligible institution.

If you are enrolled **only** in Independent Study courses, your enrollment status can never be considered to be more than half-time. Students enrolled in a combination of regular and Independent Study courses may have reduced student financial aid eligibility and should contact OSFA for confirmation. Aid for Independent Study is only awarded for the term in which the student registers for the course.

Students with a bachelor's degree enrolling in a subsequent bachelor's degree or Teacher's Certification program must submit documentation to OSFA that a **different** second degree or a Teacher Certification is being sought. You must request a "Certification of Enrollment in Post-Baccalaureate Course Work" form from OSFA. Students enrolled in a Teacher Certification program are eligible to apply for Federal Direct Loans or Federal Direct Parent (PLUS) Loans. Students must be enrolled at least six hours a semester. If you are not working toward a degree, teacher certification, or are not taking required preparatory courses for admission in another bachelor's or graduate program, you are not eligible to receive student financial aid.

If you enroll in In-Service Education courses you may be eligible to receive aid if you are in a degree-seeking program. You must obtain a certification letter from OSFA for each course.

Students regularly enrolled in a degree seeking program who are studying abroad and have completed the University's "Study Abroad Credit Approval Form" are eligible for aid. Contact OSFA to document allowable expenses.

Read the "Fees and Financial Aid" section of each semester's *Schedule of Classes* for details on how student financial aid is disbursed.

If you pre-register for classes, note the Payment Deadline on your Fee Invoice. Your schedule will be canceled if you do not pay fees by the Payment Deadline on your Fee Invoice. Students who have been awarded student financial aid are eligible for due date extensions. Questions concerning fee deferments beyond the fee payment deadline printed on the Fee Invoice should be directed to the Student Accounts Department in the Bursar's Office (706)542-2965. If all requirements have been met, checks are mailed ten days before the semester begins for students who are pre-registered for the required number of hours and have no flags or holds on their records.

Any aid you receive or expect to receive from an outside source must be reported to OSFA, regardless of when you receive notification of the award. This includes scholarships, grants, loans, and assistantships or fee waivers. The receipt of such aid may result in a reduction, cancellation, and/or repayment of your need-based award(s).

If your gift aid (grants and scholarships) exceeds the cost of your tuition, fees, books and supplies, consult federal and state income tax instructions when completing your income tax returns.

If you receive an out-of-state fee waiver after a semester begins, you may be required to repay aid already disbursed in order to reduce or eliminate an overaward. Any fee waiver you receive will be considered when determining your eligibility for other types of student financial aid.

Students applying for Title IV aid as eligible non-citizens whose citizenship status is not confirmed on the SAR must provide OSFA with appropriate documentation (Alien Registration Receipt Card Form I-151 or Form I-551, a passport, or I-94) showing that they are permanent residents or other eligible non-citizens. OSFA will then initiate a secondary confirmation with the Immigration and Naturalization Service (INS). This must be received before students will be awarded any aid. United States citizens also have to provide documentation if their citizenship is not confirmed on the SAR.

Amounts received under the Board of Regents' Employee Tuition Remission and Reimbursement Policy will be reflected on the Award Letter of any student receiving other student financial aid. This amount will be considered when determining aid eligibility as well as the need for reduction in any student financial aid already awarded.

UGA participates in the U.S. Department of Education's Quality Assurance Program (QAP) which is designed to help post-secondary educational institutions improve the delivery of student financial aid. Depending on the QAP requirements, some students may be asked to provide additional documentation during the fall of each year as a review of our institutional performance.

TYPES OF AID

Grants, loans, Federal Work-Study, and a limited number of scholarships are available through this office to help defray educational expenses at the University of Georgia. Grants do not have to be repaid. Federal Work-Study awards are earned during the period of enrollment. Most loans must be repaid in cash. You must be enrolled at least half-time to receive a Federal Direct Loan or Federal Direct Parent (PLUS) Loan. Federal Pell Grants are available for less than full-time students depending on need. HOPE Scholarships, Federal Supplemental Educational Opportunity Grants, Federal Perkins Loans, and Federal Work-Study are available for one or more hours of enrollment. All student aid will be awarded based on anticipated full-time enrollment unless otherwise noted on your Award Letter. The following programs are available at the University of Georgia:

Grants/Scholarships

Federal Pell Grant is awarded to undergraduate students earning a first bachelor's degree. The grant is determined by the Cost of Attendance, the Expected Family Contribution provided by the U.S. Department of Education, and your enrollment status. If you are enrolled full time (twelve or more credit hours), you receive your full eligibility. If you are enrolled nine to eleven credit hours, you receive three-fourths of your eligibility. If you are enrolled six to eight credit hours, you receive one-half of your eligibility. If you are enrolled less than six credit hours, you receive one-fourth of your eligibility.

Federal Supplemental Educational Opportunity Grant (FSEOG) is awarded to undergraduate students. Eligibility is based on Established Financial Need, and funding is limited to students with full Federal Pell Grant eligibility.

HOPE Scholarship (Helping Outstanding Pupils Educationally) is funded by the Georgia Lottery for Education and is available to eligible 2002 Georgia high school graduates. Others are eligible to receive the HOPE Scholarship as a renewal of their 2001-02 HOPE award, or by having a 3.0 cumulative GPA at the 30th, 60th or 90th attempted hour benchmark. Full time enrollment is not a requirement. For 2002-03 the HOPE Scholarship will cover tuition and required fees and provide a $150 book allowance each semester for those working on a first undergraduate degree. Grade point eligibility for entering freshmen is based on a final high school core curriculum GPA of 3.0 or better as determined by the high school and reported to the Georgia Student Finance Commission (GSFC). UGA students currently receiving HOPE may renew the HOPE Scholarship based on UGA's certification of their grade point eligibility on their course work attempted. Students who have lost HOPE due to not having the required 3.0 GPA may regain it after their 60th or 90th attempted hour if their GPA has reached 3.0. Students who are applying for HOPE as well as other types of student financial aid must complete the 2002-03 Free Application for Federal Student Aid (FAFSA) and provide verification information if required. Students who are applying for the HOPE Scholarship only are encouraged to complete the Electronic HOPE Application (eHOPE) instead of the FAFSA. Go to *www.gsfc.org/ehope* to apply using the eHOPE. If you completed a HOPE Application (paper or electronic) in a previous year you do NOT have to complete another one; you will be automatically awarded in each subsequent year you have remaining eligibility. By completing the eHOPE in your first year of HOPE eligibility you will not have to provide any additional paperwork to OSFA during your academic career at the University in order to continue to receive HOPE. Students who complete the eHOPE are not eligible to receive federal student assistance (including student and parent loans) until the FAFSA has been completed. Transfer students who received HOPE elsewhere will be evaluated on the basis of their GPA on **all** previous course work attempted after high school graduation. HOPE recipients who wish to enroll as transient students at other HOPE eligible institutions (particularly during the Summer session) are eligible to receive HOPE funds at the transient institution. Contact OSFA and ask to speak with a HOPE Counselor to request the appropriate form to request payment for transient study. Students are eligible for up to 127 hours of attempted course work, unless they are in an approved five year degree program (Landscape Architecture and Pharmacy). You must complete the application process before the end of Spring Semester 2003 in order to be paid for the 2002-03 award year. Contact the GSFC at 1-800-546-HOPE or access the HOPE Scholarship Web site at *www.hope.gsfc.org* for further details.

Law Enforcement Personnel Dependents Grant of $2,000 per academic year is awarded to eligible Georgia residents who are dependent children of Georgia law enforcement officers, prison guards, or firemen who were permanently disabled or killed in the line of duty. Eligible students should contact the Georgia Student Finance Authority at (800)776-6878.

Georgia Public Safety Memorial Grant is awarded to the son or daughter of any Georgia public safety officer who is killed or permanently disabled in the line of duty. This program, which is funded by the Georgia

Lottery for Education, covers the Cost of Attendance at a Georgia public post-secondary institution, minus other gift aid received, including the Law Enforcement Personnel Dependents Grant.

Loan Programs

The Federal Direct Loan allows students enrolled half time or more to borrow low interest money for educational expenses. There are two types of Federal Direct Student Loans: **1) Federal Direct Subsidized Loans,** and **2) Federal Direct Unsubsidized Loans**. The Federal Direct Subsidized Loan is need-based and a federal government subsidy pays the interest while the student is in school and during the six-month grace period. The Unsubsidized Loan is not need-based and was created for borrowers who do not qualify for interest subsidies. The student either pays the interest while in school and during the six-month grace period, or it is added to the balance of the loan.

Federal Direct Loan interest rates are variable. For the year beginning 1 July 2001, the interest rate is 5.39% for Federal Direct Loans. The interest rate is tied to the rate for 91-day Treasury bills plus 1.7%. A loan fee of 3% is deducted from each disbursement. This money is retained by the federal government to reduce the cost of supporting low-interest loans. Repayment begins six months after graduation or termination of at least half time enrollment.

Determining your eligibility for a Federal Direct Loan does not commit you to accepting the loan or the amount (you may borrow less than your full eligibility). You are obligated to repay only if you have accepted a check.

Federal Direct Loan maximums are $2,625 per year in the freshman year (0-29 hours earned) $3,500 per year in the sophomore year (30-59 hours earned), $5,500 per year in the junior year (60-89 hours earned) and $5,500 per year in the senior year (90+ hours earned), with a $23,000 cumulative total of Subsidized and Unsubsidized Loans for all undergraduate studies. Graduate students may borrow $8,500 per year, not to exceed the COA. The cumulative total for Subsidized Loans for Graduate studies is $65,500.

Additional Federal Direct Unsubsidized Loan maximums for Independent students are $4,000 per year in the freshmen and sophomore years, $5,000 per year in the junior and senior years and $10,000 per year for graduate students, not to exceed the COA. Also, dependent students whose parents were denied the Federal Direct (PLUS) Parent Loan by the Federal Servicer and who do not choose to use an endorser may submit a written request and borrow Federal Direct Unsubsidized Loan funds. The maximum cumulative total of Subsidized and/or Unsubsidized loans and Additional Unsubsidized loans for independent undergraduates is $46,000 and for graduates is $138,500.

When the loan is approved, the funds are disbursed by the Student Accounts Department in Business Services at the beginning of each term. **OSFA does not disburse funds**.

If you are requesting a Federal Direct Loan (Subsidized and/or Unsubsidized), **DO NOT submit a loan application to OSFA**. A preprinted Promissory Note will be mailed to you after you return a signed Award Letter indicating the amount you wish to borrow. Students who borrowed under the Federal Direct Loan Program during the 2001-02 academic year will usually not be required to sign a new Promissory Note as the Master Promissory Note is used for subsequent years.

Receipt of an Award Letter from OSFA indicating eligibility for a Federal Direct Loan does NOT mean the loan is approved. You must complete and return the Promissory Note (if required) to the Student Accounts Department in Business Services. When the Promissory Note is verified as accurate the loan is approved. **OSFA determines your eligibility for the loan but does not disburse funds.**

The yearly maximum for the Federal Direct Loan will cover Fall, Spring, and Summer Semesters. The following Fall is the next term loan funds will be available. Students may request the yearly maximum over Fall, Spring, and Summer, or over Fall and Spring. Students may request less on an Award Letter for Fall and Spring and request the remaining eligibility on a revised Award Letter which includes Summer.

The **Federal Direct Parent (PLUS) Loan** is an educational loan for parents of dependent undergraduate students enrolled at least half time. Financial need is not a requirement, but good credit is required. Loan eligibility is based on the Cost of Attendance minus other aid received.

Federal Direct Parent (PLUS) Loan interest rates are variable. For the year beginning 1 July 2001 the interest rate for Federal Direct Parent (PLUS) Loans is 6.79%. The interest rate is tied to the rate for 91-week Treasury bills plus 3.1%. A loan fee of 4% is deducted from each delivery of loan proceeds.

Federal Direct Parent (PLUS) Loan funds will be disbursed by the Student Accounts Department in Business Services. **OSFA does not disburse checks.** Federal PLUS Loans are disbursed each semester. The first payment is due 60 days after the loan is disbursed.

The student financial aid application process must be completed by **ALL** students requesting loans, even if the only aid being requested is the PLUS Loan.

If the parent is denied the Federal PLUS Loan and elects not to use an endorser, the student may be eligible for additional unsubsidized Federal Direct Loan funds, not to exceed the Cost of Attendance. Freshmen and Sophomores may borrow $4,000; Juniors and Seniors may borrow $5,000. A written request must be mailed, faxed (706)542-8217, or e-mailed (osfa@arches.uga.edu) to OSFA before the unsubsidized loan will be processed.

Federal PLUS Loans will be automatically awarded to eligible students whose parents received a Federal PLUS Loan during the 2001-02 academic year. Other dependent students who wish to apply for a Federal PLUS Loan must mail, fax (706)542-8217, or e-mail (osfa@arches.uga.edu) a written request to OSFA indicating the amount of Federal PLUS Loan requested. Eligibility will be determined and the loan will be added to the Award Letter.

Federal Perkins Loan eligibility is based on Established Financial Need. Repayment begins nine months after graduating or leaving school. Interest accrues at 5% per annum during repayment. The loan is processed by the University. Annual loan limits are $4,000 for undergraduates and $6,000 for graduates with a $20,000 cumulative undergraduate limit and $40,000 cumulative undergraduate/graduate limit. Undergraduates are limited to a cumulative $8,000 until 60 semester hours have been earned. Federal Perkins Loans are awarded on a first-come, first-served basis to students whose files first become complete each year. If additional funds become available because these students turn down the loan, additional loans are awarded as students contact OSFA to request the loan.

Federal Work Study

Federal Work-Study (FWS) eligibility is based on Established Financial Need. Awards range from $1,500 to $3,000 per year. Jobs are on campus and work schedules are planned around your class schedule. Jobs pay $5.50 per hour and generally require 10 to 18 hours of work per week. FWS awards do not defer tuition and fees. Students are paid bi-weekly for hours worked. Every student awarded FWS receives a Federal Work-Study Questionnaire along with an Award Letter. This questionnaire allows you to list your job skills and areas of interest and must be returned. OSFA uses this information to make job assignments and strives to honor student preferences as long as employer needs can be met. Assignments are made for the entire academic year. Job assignments will be mailed to students in late July.

Satisfactory Academic Progress Policy for Student Financial Aid Recipients

The U.S. Department of Education mandates institutions of higher education to establish minimum standards of satisfactory academic progress for students receiving Federal aid. These same standards are maintained by the University of Georgia for students receiving institutional aid. The policy can be found at www.uga.edu/osfa.

Student Information Systems

Student Information Systems provides computer-based information system services to Student Affairs departments. This service involves: maintenance of existing computer-based systems; assisting and/or training user departments in obtaining various ad hoc or short-term reports; development of new "state of the art" user-oriented application systems for both the mainframe computer and various microcomputers; micro-mainframe interface assistance; data base planning, coordination, and consultation. 158 Boyd Graduate Studies Research Center, (706) 542-6135.

Student Life Studies

Student Life Studies provides research, evaluation and assessment for the Division of Student Affairs. These activities help improve the quality of services and programs, as well as increase the knowledge base about student development and services and assess the organizational effectiveness of the Student Affairs Division. Student Life Studies also assists with division planning and provides opportunities for graduate students to participate in a variety of research and assessment projects. 130 Memorial Hall, (706) 542-8243.

University Health Center

Before their arrival on campus, students *must* complete and return to the University Health Center the health history form and the mandatory immunization record form. Students may not register for classes without documentation for the immunization requirements for new students established by the Board of Regents. Students with special problems or disabilities should have their physicians advise the Health Center of any anticipated needs or medical requests before arrival on campus.

The University Health Center provides primary health care on an outpatient basis to students of the University of Georgia and their spouses. The Health Center is accredited by the Joint Commission on Accreditation of Healthcare Organizations.

During fall and spring terms outpatient care is available on a daily basis. Over the summer term these services are available Monday-Saturday. In general, students are seen on an appointment basis to reduce waiting time. Students with urgent health care problems may be seen on a walk-in basis, or they may call ahead for a same-day appointment.

Outpatient clinics include an acute care clinic, medical clinic, mental health clinic, sports medicine clinic, women's clinic, physical therapy clinic, allergy-immunization clinic, travel clinic, and dental clinic. Pharmacy, laboratory, and x-ray services are available at any time the outpatient clinics are open.

The prepaid student health fee, supplemented by nominal fee-for-service charges, entitles students to a wide range of health care services. A fee-for-service schedule is applicable for student spouses and for students who otherwise may be fee-exempt. The health fee supports an excellent staff of health professionals: physicians, physicians' assistants, nurse practitioners, registered nurses, psychologists, and other health care professionals. The health fees also support a modern health care facility.

Supplemental student insurance is available to provide accident and sickness coverage. This policy has been designed to meet the needs of students and families at a minimum cost. Students may enroll in this plan at the beginning of the school year or at the beginning of each term for the remainder of the year. It is very important that students not covered by parents or other health insurance be enrolled in a supplemental insurance plan.

A health education program (542-8690) is staffed by professionals in the field of health promotion. Educational programs are provided on a variety of health-related topics. Time is available for private consultation as well as for specific program requests. The health education program encourages healthy choices by increasing health awareness and teaching responsibility for personal health and well-being.

Medical information contained in student medical and mental health records is strictly confidential and may not be released without expressed written permission from the patient or upon court order.
University Health Center, (706) 542-1162.

University Housing

RESIDENCE HALLS

General Information

Approximately 6,000 students are housed in 17 residence halls, geographically divided into two residential areas—the Georgian and the Colonial Residence Halls—on the University of Georgia campus. These residential communities are designed for comfortable living, optimal convenience, and a positive contribution to the educational experience of the residents. Each residence hall features a modern, comfortable environment in which all residents can benefit and take pride. Within each residential area, attractive lounges, computer labs, study and meeting areas, TV rooms, coin-operated laundry facilities, recreational facilities, and mail facilities are provided. Rooms are furnished with single beds, chests of drawers, desks and chairs, and cable TV and telephone service. A majority of bath facilities are centrally located on each hall, and are shared by students on each floor in most halls. All include privacy-enhancing features such as partitions and doors, and Reed Hall, McWhorter Hall, and Oglethorpe House feature suite-style bathroom facilities. The combination of physical facilities, staff, and student interest contributes to a stimulating environment in University Housing.

Through the residence halls, students have an opportunity to participate in social, educational, and recreational programs and activities designed to enhance their personal, scholastic, and social development.

Housing Contract and Application

Applications for residence halls are mailed to new freshmen and transfer students with their official notices of acceptance. The application and application fee must be returned to the Housing Office in accordance with the accompanying instructions. Students may also apply for housing online at *www.uga.housing.edu.*

The residence hall contract is for the academic year. All students are urged to be familiar with the terms and conditions of the contract prior to signing. Although binding for the fall and spring semesters, provisions are made for mid-year terminations required by academic course programs such as student teaching, internships, and co-ops.

To apply for housing accommodations, applicants must submit an application and a non-refundable $25 application fee to the Department of University Housing.

Students who decide not to enroll at the University after applying for housing should contact the Housing office to cancel their application.

Housing Assignment

Priority of residence hall assignments are based on the date the completed housing application and application fee are received in the University Housing Office. Students will receive their academic year contracts and notifications of assignments as early as possible before the semester for which application has been made. A signed residence hall contract, accompanied by a $275 pre-payment for the first semester, should be forwarded to the University Housing Office by the date specified on the contract.

Every effort is made to honor hall, roommate, and visitation preferences as space permits. Roommate preference will be honored if both applicants request each other in writing and a double room vacancy exists. Students who do not state a preference for a specific person as a roommate will be assigned a roommate without regard to race, age, color, creed, religion, or national origin.

Opening and Closing of Residence Halls

University residence halls typically open at 10:00 a.m. on the day prior to the first day of registration and close at 10:00 a.m. on the day after the last officially scheduled examination. Residents may remain in the halls at the end of the semester for 12 hours after their last scheduled examination or until 10:00 a.m. on the day after the last officially scheduled examination as per the official University calendar, whichever is earlier. During official holidays within a semester and between semester breaks, the University reserves the right to close certain halls. Some halls remain open for continuous occupancy and students who require housing during break periods should live in one of those halls.

The regular semester room rent does not include housing rates for housing between semesters. The University reserves the right to charge extra rent when housing is provided during such times and to make changes in fees or other charges at the beginning of any semester without previous notice.

Students who require year-round housing accommodations should request an assignment in one of the residence halls that provides continuous housing.

Responsibility for Property

Resident students are held responsible for any damages to their rooms and furnishings. Damages will be assessed by the University and the student billed for repairs or replacements. Students should inform University officials of any damages which exist at the time they occupy their rooms.

Although precaution is taken to maintain adequate security, the University cannot assume responsibility for loss or damage to student possessions. Students or their parents are encouraged to carry appropriate insurance to cover such losses.

FAMILY AND GRADUATE HOUSING

The Family and Graduate Housing community houses approximately 1,300 residents in the University Village, Rogers Road, and Brandon Oaks areas. The complex offers one- and two-bedroom unfurnished apartments housing 578 undergraduate and graduate students from all over the world. These on-campus apartments are designed to provide convenient and comfortable living at a minimal cost.

Applications may be obtained from the Family and Graduate Housing Office or on the Web at *www.uga.housing.edu*. To qualify for residency, students must be married, be single parents with one or more dependents, be students with legal dependent(s), or be a single graduate student. For more detailed information, contact the Family and Graduate Housing office, or visit *www.uga.housing.edu.*

Assignments

Assignments are made from a waiting list established according to the date applications are received in the Family and Graduate Housing Office with a $25.00 non-refundable application fee.

Information

For residence halls and general information:

Department of University Housing
(706) 542-1421
FAX (706) 542-8595
Russell Hall
The University of Georgia
Athens, Georgia 30602-5575
www.uga.housing.edu

For on-campus family housing:

Family and Graduate Housing Office
(706) 542-1473
FAX (706) 542-8402
710 East Campus Road
The University of Georgia
Athens, Georgia 30602-4622
www.uga.housing.edu

Other Student Services and Activities

The Academic Center

The mission of the Academic Center is to assist students in developing the skills necessary to achieve academic success at the University of Georgia. The Academic Center houses a Tutorial Program and a Learning Center, and offers an Outreach Service and a series of Academic Workshops. The Center is located on the first floor of Milledge Hall and all services are free to University students. See the Division of Academic Assistance, page 159, for further information about the services offered by the Center.

Art, Drama, and Music Activities

Art activities include exhibitions by students and faculty of the School of Art as well as occasional traveling exhibitions, slide lectures and informal critiques by visiting artists and various student field trips. Spring, summer, and fall sessions in Cortona, Italy are jointly operated by the School of Art and the School of Environmental Design.

All students are eligible to participate in the regular major productions of the University Theatre in the drama department as well as in numerous smaller stage and media activities. Outstanding professional companies also appear on the campus. A summer Studies Abroad Program in Italy and England is available jointly operated by the Department of Drama and the College of Journalism and Mass Communication.

The School of Music presents weekly programs featuring faculty members, guest artists, and students. Other music activities include performances by student choral organizations, band organizations, and the Symphony Orchestra.

Campus Transit System

The Campus Transit System, funded by student transportation fees, provides bus service throughout the campus for students and employees. Frequent service connecting academic areas, parking, and residential areas is provided on nine routes Monday through Friday between the hours of 7:00 a.m. and 6:00 p.m. In addition, three routes operate during the evening hours until 12:30 a.m. A Rider's Guide showing the routes, timetables, and bus stops is available on the buses and at many locations throughout campus. Specially equipped vans provide transportation services for mobility-impaired students throughout the service area of the Campus Transit System. Through an agreement with the Athens-Clarke County Government, students with valid UGA ID also have access to the services provided by the Athens Transit System without payment of fares.

Career Center

The Career Center assists UGA students, including postdoctoral candidates, alumni, faculty, and staff in developing their full career potential through planning and appropriate work experiences. Specifically, the Center assists students seeking part-time and summer employment; assists students and others wanting to learn more about careers and career change; teaches skills necessary in today's competitive job market; provides cooperative education, internships, and other experiential education opportunities; and assists graduating students and alumni who are seeking full-time employment or entrance into graduate or professional school.

Although not an employment agency, the Center helps develop tools required for an effective job search, including interview skills and sound search strategies. In addition, students may conduct interviews in the Center with representatives of employing organizations. Opportunities for suitable employment are often referred to the attention of students and alumni. Because the Center is a conduit between the campus and the world of work, it can advise candidates about employment trends and current opportunities.

To gain maximum benefit, students, alumni, and others should familiarize themselves with, and use, the wide variety of services offered by the Career Center. Students should contact the Center very early in their university careers.

CAREER PLANNING

To assist students, alumni, and other interested parties, individual appointments may be scheduled for assistance in the career planning process. Many seminars are conducted daily covering general and specific job search topics. In addition to the regularly scheduled seminars, outreach programs are available for presentation for classes, organization meetings, and the like.

Special Career Day programs are sponsored throughout the year for students in all majors and all levels—freshmen through alumni.

CAREER PLANNING COURSE (ECHD 3050)

Students may register for a credit course, ECHD 3050, Career and Life Planning, any semester they are enrolled. This two semester academic credit course provides opportunities for students to identify interests, needs, and abilities; to observe work activities; and to develop job-hunting skills.

CAREER INFORMATION LIBRARY

An important part of career planning is having access to information about careers. The materials found in the Center's Career Information Library will provide an excellent base of knowledge for students and alumni seeking this critical information. This information is available during regular business hours, and with special permission, may be checked out for overnight use.

COOPERATIVE EDUCATION/ INTERNSHIPS

Cooperative Education (Co-op) is a structured educational plan alternating or combining periods of work with periods of academic study. An internship provides a one-time (usually one semester) opportunity for a student to utilize his or her academic training in a work setting. Both programs offer students an opportunity to gain practical work experience. These experiences also help students clarify career goals as they relate to academic endeavors.

STUDENT EMPLOYMENT

Frequently students, or spouses, need to secure employment while in school or during their stay in Athens. With this in mind, the Center provides Student Employment service. A number of local employers list part-time job opportunities with the Center. In addition, a number of employers list opportunities for seasonal and/or summer employment. This service is available all year round. Students and spouses may use this service by visiting the Center. No appointment is necessary.

CAREER PLACEMENT

This service assists all students who are seeking suitable employment as the completion of their academic program draws near. For students to realize the full benefit of this service, they should register and begin the process at least twelve months prior to the month in which they will receive their degree. On-campus interviewing with employers from business, industry, education, government, and non-profit organizations is available, as well as resume referrals, mock interviews, and job vacancy announcements. Students are encouraged to participate in all special efforts by the Center. Clark Howell Hall, (706) 542-3375

Food Service

The University operates three food service facilities for general student use: Bolton Hall, Oglethorpe Hall, and Snelling Hall. The dining halls are located at easy-to-reach locations either by walking or by UGA bus. Two economical meal plans as well as meals on a cash basis are available at these facilities.

The 2001-02 rates for the two meal plan contracts are shown below. Rates for the 2002-03 academic year were not available when this Bulletin was printed, but may be obtained by calling the Food Services Department, (706) 542-1256.

Academic Year Contract	
5 days unlimited meals (Monday-Friday)	$2,020
7 days unlimited meals (Monday-Sunday lunch)*	$2,222

*No evening meal on Sunday

The University Food Services Department offers a variety of special events during the academic year, including a Hawaiian Luau, Steak Night, International Celebration, special holiday dinners and ice cream sprees. Meals are served in a pleasant atmosphere and with an unlimited seconds system of service. There are a number of cash basis only outlets located in several of the academic buildings, the main library, the Georgia Museum of Art, and the Creamery.

Learning Disabilities Center

The University of Georgia Learning Disabilities Center houses three divisions, the Regents' Center for Learning Disorders, the Learning Disabilities Service Division, and the Distance Learning Division. The Learning Disabilities Center is nationally recognized for generating research pertaining to adults with learning disabilities, and its assistance program for college students with learning disabilities.

The Learning Disabilities Evaluation Division is funded by the Board of Regents of the University System of Georgia to provide assessment resources to students within the University System with learning problems due to a disability. Comprehensive standardized assessments are available to qualified students to provide recommendations regarding how to best maximize students' functioning in college and information related to requests for special accommodations and/or modification. There is a fee attached to the diagnostic evaluation.

The Service Division of the Learning Disabilities Center was established to serve both students and faculty by promoting an understanding of learning disabilities, explaining students' needs and helping students arrange classroom modifications that will help them learn to their potential. To be eligible for services, students must be evaluated at the Regents Center for Learning Disorders and/or meet criteria established by the Board of Regents. Students should contact the Learning Disabilities Center at (706) 542-4589 for information on procedures necessary for becoming eligible for receiving services at the University of Georgia. Services available are based on individual needs and may include early registration, consultation with faculty, textbooks on tape, note takers, computer lab, learning disabilities support group, and testing accommodations. Learning disabilities specialists address individual strengths and weaknesses in special courses and help with learning strategies. There is no cost attached to services.

The Distance Learning Division provides state and national technical assistance via interactive TV, satellite teleconferences, e-mail courses, and traditional training formats. The Division provides satellite teleconferences focusing on topics relevant to the populations with learning disabilities and attention deficit disorders.

Parking Services

All motor vehicles parked on campus between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, must display a windshield decal, temporary decal, or hangtag issued by Parking Services. Failure to register a vehicle and/or park legally will result in citations, vehicle immobilization, or impoundment of vehicle for repetitive citations. Parking options for students are issued based upon whether the student is a graduate or undergraduate student, dormitory resident, or commuter. Parking fees are determined by the type of permit issued.

In addition to surface parking areas, housing students have the option of purchasing access to the West Campus Parking Deck, a 900-space high-rise facility located in the Russell Hall Community. This facility offers a 24-hour guaranteed parking space and the gates are accessed using coded hangtags only. The South Campus Parking Deck, located near the Georgia Center for Continuing Education, provides parking for conferees, visitors, and a limited number of housing students. Selected juniors, seniors, and graduate students may also be eligible to park in the North Campus Parking Deck, located between Jackson and Thomas Streets.

When coming to Parking Services to secure a parking decal or hangtag, you need to know and/or have the following items available: a student identification card or current driver's license, current vehicle information, including vehicle make (Honda), vehicle model (Accord), and correct tag number. Payment options are cash, check, and credit card (Visa, MasterCard, or Discover).

Complete information regarding categories of parking permits, fees, fines, and appeals may be obtained by visiting Parking Services or by calling 542-PARK (7275). The Parking Services Building is located at 325 River Road, in the large commuter student parking lot situated east of the Ramsey Student Activities Center and the East Campus Parking Deck. Other current information may be accessed online at www.parking.uga.edu. It is the students' responsibility to know and follow safety and parking rules and regulations.

Psychology Clinic

The Psychology Clinic, located in the Psychology Building, offers a wide range of psychological services to students, faculty, staff, and to the general community. These services include assessment of various psychological problems and treatment to alleviate these problems. Problems dealt with include depression, anxiety, intense fears, headaches, hypertension, chronic pain, eating disorders, interpersonal difficulties, marital problems and children's problems, among others. Appointments and/or information are available by calling the Psychology Clinic at 542-1173. Fees for service are made affordable through a sliding fee scale based on income.

Registrar

The Office of the Registrar is responsible for registering university students, reporting their grades, and maintaining their permanent academic records. In addition, the office provides a variety of related services to students, academic departments, and other constituents.

The Record Services and Registration Office, 105 Holmes/Hunter Academic Building, (706) 542-4040, provides assistance to students with name and address changes, enrollment certifications, registration problems, schedule adjustments after the drop/add period, and transcript requests. Service Representatives will respond to all in-person and telephone inquiries regarding student-related information as allowed by University, state or federal policies.

Requests for transcripts must be in writing as required by the Family Educational Rights and Privacy Act of 1974. A notice of at least 24 hours is required. Standard request forms are available at the Records Services Office; requests in letter form will also be accepted. All transcripts are $2.00 each. FAXed transcripts are $3.00 each ($6.00 for overseas) in addition to the $2.00 basic transcript fee. These charges are subject to change without prior notice.

The Data Entry and Processing Office, 107 Academic Building, (706) 542-4055, is responsible for the creation and maintenance of the permanent academic records of enrolled students. In response to information from the deans' offices this office processes class rolls, grade changes, grade reports, and graduation statistics. This office also certifies veterans and qualified dependents for educational benefits.

VETERANS' CERTIFICATION

Veterans eligible for educational benefits and dependents of deceased or 100% disabled veterans eligible for educational benefits may apply for those benefits through the Veterans Education Benefits Office in the Office of the Registrar, 106 Holmes/Hunter Academic Building, (706) 542-8772. To apply for VA educational benefits, veterans should bring a copy of their DD-214, and reservists must supply a copy of their Notification of Basic Eligibility, to the Veterans Education Benefits Office.

At the beginning of each term, enrolled veterans or dependents receiving benefits must submit a Veteran's Enrollment Form to the Veterans Education Benefits Office in order to maintain their eligibility for VA educational benefits. Veterans or dependents receiving compensation who withdraw from the University or reduce their academic load are required to report such action promptly to the Veterans Education Benefits Office. For more information, contact the Registrar's Office, 106 Holmes/Hunter Academic Building, (706) 542-8772.

Opportunities and Programs

Academic Common Market

The University of Georgia participates in the Academic Common Market, an agreement for sharing specialized academic programs among the participating states of the Southern Regional Education Board (SREB). Participating states are able to make arrangements for their residents who are fully admissible into specific University academic programs to enroll on an in-state tuition basis. Applicants must (1) be accepted as a major (not an intended major) into one of the programs listed below, and (2) obtain certification of residency from the Common Market Coordinator in their home state. The following undergraduate University programs are available to residents of the indicated states :

PROGRAM	*AVAILABLE TO RESIDENTS OF:*
AB in Japanese Language and Literature	Kentucky
AB in Religion	Delaware, Mississippi
ABJ in Magazines	South Carolina
BBA in Risk Management and Insurance	Maryland
BBA in International Business	Louisiana
BFA in Art/Crafts (Jewelry and Metal)	Mississippi, South Carolina,
BFA in Photography	Kentucky
BFA in Interdisciplinary Studies (Scientific Illustration)	Maryland, South Carolina, Virginia
(Digital Media)	Kentucky, South Carolina
BLA in Landscape Architecture	Delaware, Tennessee
BMUS in Music Therapy	Delaware, Louisiana, Maryland, Mississippi, South Carolina
BS in Genetics	Alabama, Kentucky, Louisiana, Maryland, South Carolina Tennessee
BS in Microbiology	Delaware
BSED in Dance Education	Alabama, Delaware, Louisiana, South Carolina, Tennessee
BSEH in Environmental Health	South Carolina
BSFCS in Child and Family Development	South Carolina
BSFCS in Clothing and Textiles	Mississippi
BSFCS in Consumer Economics	South Carolina
BSFCS in Consumer Journalism	South Carolina
BSFR in Pre-Forest Resources (Wildlife)	Maryland

For further information about the Academic Common Market, visit the Website of the SREB at www.sreb.org or contact the UGA Residency, Non-Resident Tuition Waivers & Cross Registration office at (706) 542-8796, email jwmeyer@uga.edu.

Advanced Placement Program

The purpose of the Advanced Placement Council is to coordinate and supervise all advanced placement activities instituted by the University of Georgia and to provide liaison among the various University units in matters concerning advanced placement exemption and credit in basic courses. The Council is made up of faculty representatives from the departments that accept advanced placement tests for their subjects. The Council meets each year to review the tests and the success of students who use them for placement into higher level courses.

The University grants exemption and credit on the basis of College Board SAT II

Achievement, International Baccalaureate, and Advanced Placement Test scores in foreign languages, mathematics, biology, physics, chemistry, economics, English, American history, European history, art, music, political science, computer science, ecology, psychology, and statistics. The scores and resultant exemption or credit are available from the Honors Program web site at www.uga.edu/honors. Prospective students are urged to take advantage of these opportunities.

Placement tests are also given to new students during summer orientation sessions prior to fall enrollment. Students invited to these sessions are encouraged to attend, as limited time during fall registration does not permit the same intensive testing and counseling procedure. Students making an acceptable score on these placement tests are given, on the recommendation of the respective department, advanced placement and credit in the appropriate course(s). Students who take more than one advanced placement test in a given subject will receive credit for the highest score that they earn.

Students planning to enroll at the University of Georgia who took the College Board SAT II Achievement Tests and/or participated in the special Advanced Placement Program of the College Board should request that the College Board testing center submit their scores to the Honors Program, University of Georgia, Athens, Georgia 30602-6116. Inquiries concerning the Advanced Placement Program should be directed to the Honors Program, University of Georgia, Athens, GA 30602-6116, (706) 542-3240.

Advanced Placement Program for AP Teachers

This program is for high school teachers who are teaching or are planning to teach high school Advanced Placement (AP) courses. Three Georgia Staff Development Units are awarded at the completion of the course. All of the AP courses will be offered as part of an annual one-week Summer Institute. These intensive learning experiences are intended primarily to assist teachers in preparing and teaching their AP courses, and to help build networks of AP teachers within their disciplines.

Instructors are experienced College Board certified AP teachers who are nationally recognized scholars in their field, and experienced AP Readers thoroughly familiar with the College Board's Advanced Placement Program.

Teachers must register for AP courses through the Office of Academic Special Programs. Please visit the Academic Special Programs Web Site at www.uga.edu/oasp for detailed information, or contact: Ms. Mary Lue Walser, Director, Academic Special Programs, at mwalser@arches.uga.edu.

American Language Program

The University of Georgia's American Language Program teaches English as a second language to speakers of other languages seeking to improve their communicative skills. In courses offered by the American Language Program, students study English for preparation for enrollment in universities or colleges whose primary language of instruction is English; for cultural adaptation; or for pronunciation, fluency, and accent reduction. Courses are designed on an intensive schedule to help students learn English in the shortest possible time. Admission to the American Language Program is reserved for students who have completed secondary school studies and who can devote a majority of their time to learning English.

Information regarding the American Language Program may be obtained on the department's World Wide Web page, *www.gactr.uga.edu/alp*, by calling (706) 542-4095, or by visiting the offices at 190 Georgia Center.

ARCHE Cross Registration Program

The Atlanta Regional Consortium for Higher Education, ARCHE, is a consortium of nineteen public and private institutions of higher learning in the Atlanta/Athens area, including the University of Georgia. Founded in 1938, the consortium provides a structure to enhance educational opportunities through academic cooperation among the member institutions and their communities.

The purpose of cross registration is to provide opportunities for enriched educational programs by permitting students at any ARCHE institution to take courses at any member institution. To participate, cross registration students must enroll in at least one course at their home institution.

More information regarding the ARCHE cross registration program may be obtained from ARCHE's Web site at www.atlantahighered.org/consortium/crossreg.htm, by contacting the UGA cross registration coordinator at the Office of the Registrar, Room 114 Holmes/Hunter Academic Bldg., by telephone at (706) 542-8795, or by e-mail at lpeck@uga.edu.

Governor's Intern Program

The Governor's Intern Program provides a unique academic experience while giving students a practical, firsthand look at agencies in state and local governments or non-profit organizations throughout Georgia. Internships may be full or part-time and are available for each academic term. Interns must be currently enrolled junior, senior, graduate, or law students with a 2.5 or higher GPA. Interns receive a stipend, and internships may be done for academic credit at the discretion of the student's major department. A report is submitted by each intern to the Governor's Intern Program after each project's completion. Upon approval by the staff, the report is filed in the Georgia State Archives for future reference. Application deadlines are generally as follows: July 15 for fall semester, October 15 for spring semester, and April 15 for summer semester. Applications and specific deadlines may be obtained from the Career Center, Clark Howell Hall, or through Governor's Intern Program, 245 State Capitol, Atlanta, GA 30334.

Honors Program

The Honors Program provides participants with special Honors classes in the freshmen/sophomore core curriculum, Honors courses in a variety of majors, the opportunity to design and pursue independent interdisciplinary majors, more intensive versions of courses required for departmental majors, and independent research under faculty supervision culminating in an Honors thesis or project. In addition to individualized advising throughout their education, the program provides students with special support for graduate and professional school application, as well as national fellowship and scholarship competitions. The Honors Program is open to qualified undergraduates in all the schools and colleges of the University.

Most Honors classes and seminars have enrollments of 20 students or less and are taught by specially selected faculty. Unlike high school Honors or advanced placement classes, the University's Honors courses do not carry more credit or offer higher grade points. Rather, they are smaller, enriched in content, and sometimes more specialized. Honors classes provide faculty with opportunities to introduce their disciplines more deeply, employing innovative and more individualized approaches. Students in the program choose from over 200 Honors classes offered annually. These classes usually fulfill core curriculum or major requirements. This bulletin lists Honors classes under the departments in which they are offered. Honors course numbers are followed by an "H."

Honors students may enroll in Upper division classes in the major with Honors Option to pursue a subject more deeply within the setting of a regular course. Students may arrange additional readings and other assignments with the class instructor and secure Honors credit for these classes. Honors students also may enroll in directed study classes which enable them to work independently on a sustained research project under the guidance of a faculty member, usually leading to an Honors thesis. But the outcome may take a different form—a recital, exhibition or performance. Honors directed reading classes (4960H-4980H) and Honors theses classes (4990H) are available in most departments. The Honors Program's Center for Undergraduate Research Opportunities (CURO) annually hosts a research symposium for the presentation of research projects with sponsoring faculty.

Additionally, Honors students with sufficient background are encouraged to participate in graduate courses, with the approval of the department, Honors Office, and in cases of 8000 (Ph.D.) level courses, the Dean of the Graduate School. Students with a strong focus on their major, and significant AP or Joint Enrollment credit prior to entering the University, may pursue a combined Bachelor/Master or Bachelor / MBA program.

Students may enter the Honors Program as freshmen, or by collegiate entry after at least one semester's enrollment. Students must earn at least 14 hours of graded academic credit and have a cumulative GPA of 3.7 to be eligible for collegiate entry. The Honors Program accepts transfer students as well.

For further information about the Honors Program, consult the Honors Program Student handbook, available from the Honors Program office, or on the Web at *www.uga.edu/honors/*. Inquiries may be directed to The Honors Program, (706) 542-3240.

Medical College of Georgia School of Nursing at Athens (SONAT)

In 1974 a program leading to a baccalaureate degree in nursing was established in Athens; this is a satellite to the regular program of the Medical College of Georgia School of Nursing (MCG) in Augusta. In order to qualify, students must take 60 semester hours of pre-nursing core curriculum. This may be completed as a student at the University of Georgia enrolled in Arts and Sciences, Pre-Nursing.

The student applies to the Medical College of Georgia to take upper division courses in nursing. After acceptance into the program, the student starts his or her junior year at the Medical College of Georgia at Athens (SONAT) with a six-week summer class, Principles of Professional Nursing Practice. All courses are limited to nursing students and are taught by the MCG faculty at SONAT.

SONAT faculty supervise clinical experiences at a variety of health care agencies in the Athens and surrounding areas (may include Atlanta and Augusta).

Students enrolled in the SONAT program have all the rights and privileges of University students and also those of the Medical College of Georgia. Upon graduation from the Medical College of Georgia, students are eligible to take the National Council Licensing Examination.

SONAT offices are located in Athens. For further information about the nursing program, please access the Medical College of Georgia home page at *www.mcg.edu*. Specific nursing information may be obtained under the School of Nursing, Undergraduate Program.

National Student Exchange

See page 56 under the Department of Student Activities.

Oak Ridge Associated Universities

Since 1948, students and faculty of the University of Georgia have benefitted from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of colleges and universities and a management and operating contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Sciences and Education, the DOE facility that ORAU manages, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of under represented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the *Resource Guide*, available on the World Wide Web at *www.orau.gov/orise/resgd.htm*, or by calling either of the contacts below.

ORAU's Office of Higher Education Initiatives seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Junior Faculty Enhancement Awards and the Visiting Industrial Scientist Program, and various services to chief research officers.

For more information about ORAU and its programs, contact Dr. Gordhan L. Patel at 706-542-5969, contact Monnie E. Champion, ORAU Corporate Secretary, at 423-576-3306; or the ORAU home page at *www.orau.gov.*

Study Abroad Programs

The University of Georgia sponsors a variety of study abroad programs. The Office of International Education (OIE) offers advisory services and provides information on study abroad programs lasting an academic year, semester, quarter, summer, or Maymester. The OIE maintains an extensive library for those seeking study, work, and travel abroad opportunities.

Study abroad programs offered by UGA include programs in Australia, Bahamas, Brazil, Canada, Costa Rica, Czech Republic, Ecuador, England, France, Germany, Ghana, Greece, Hungary, India, Ireland, Italy, Japan, Kenya, Mexico, Morocco, New Zealand, Peru, Poland, Russia, Scotland, South Africa, Spain, Switzerland, and Tanzania.

The University of Georgia also participates in several other reciprocal exchange programs that allow students to pay UGA tuition and fees while attending academic institutions overseas. Currently, exchanges are offered in Argentina, Australia, Brazil, France, Germany, Japan, New Zealand, Norway, South Korea, and the United Kingdom. Some exchanges are limited to specific disciplines;

others offer a wide range of courses. Some exchanges in non-English speaking countries offer courses in English; others require language proficiency. Most exchanges last a semester or an academic year. Some exchanges are coordinated by academic departments and others are coordinated by the OIE.

For a full listing of UGA study abroad and exchange programs, please visit the Web site for the Office of International Education at *www.uga.edu/oie.*

Student Financial Aid, including the HOPE Scholarship, may be applied to UGA-sponsored study abroad and exchange programs, as well as those offered by other universities. For initial information about UGA requirements for using financial aid for study abroad, contact the OIE or visit our Web site.

In addition to UGA-sponsored study abroad and exchange programs, many other colleges and universities, language institutes, and international organizations offer opportunities for overseas study, travel, work, teaching, and volunteer experiences. Students may obtain information about these options through the OIE.

Some programs sponsored by the University of Georgia offer resident credit (otherwise, international or domestic transfer credit is awarded). Students should check with the individual program. Credit earned in programs sponsored by other institutions or organizations will be recorded as transfer credit if accepted by the University of Georgia. To obtain credit for these programs, students must complete the UGA Study Abroad Credit Approval Form before departing. Final determination of the transfer of credit will be made by the Admissions Office and/or the academic departments upon completion of the program and receipt of the final transcript. Student Financial Aid, including the HOPE Scholarship, may be applied to programs sponsored by other institutions, provided the student completes the UGA Study Abroad Credit Approval Form and meets all other UGA requirements for study abroad and financial aid.

For more information about transferring credit; resources for finding study abroad and student exchange programs; financial aid and scholarships for study abroad; working, volunteering, or interning abroad; insurance; health and safety; passports, visas, and other travel information, call the Office of International Education to sign up for a 50-minute Options Abroad Session offered three times a week. The office is located in 209 Barrow Hall, (706) 542-7903, e-mail: goabroad@uga.edu, or visit the OIE Web site at *www.uga.edu/oie/*.

University Studies

University Studies serves traditional and nontraditional students who reside in Athens-Clarke County and surrounding counties which do not include another University System of Georgia college or university. University Studies may also serve students who are enrolled because of special circumstances identified through reviews including those conducted by the Faculty Admissions Committee. In serving students who are seeking to earn degrees and who are in their first and second year of study, University Studies provides academic advising, academic support programs, and student services to enhance students' academic success.

University Studies also establishes and maintains effective partnerships with Athens

area institutions, organizations, businesses, and governmental agencies for the purpose of furthering students' educational opportunities and attainments.

Admission

Students must apply for regular undergraduate admission to the University of Georgia. Upon admission they are classified as Arts and Sciences—University Studies and may enroll in any regular academic offering which is consistent with their academic program.

Program Requirements

Students admitted as **freshmen** must complete 30 cumulative UGA semester hours in University Studies and earn a 2.0 cumulative GPA prior to transferring to another academic department (some academic departments have a higher GPA requirement). Freshmen must earn a minimum 2.0 cumulative GPA upon completion of a maximum of 40 semester hours in University Studies to be allowed to continue at the University of Georgia.

Students admitted as **transfer** students with **less than 30 semester hours** of transfer work must complete a minimum of 30 cumulative UGA semester hours in University Studies and must earn a minimum cumulative GPA of 2.0 in order to transfer to an academic major (some academic departments have a higher GPA requirement). Transfer students admitted with less than 30 semester hours of transfer work must earn a minimum cumulative GPA of 2.0 upon completion of 30 cumulative UGA semester hours or completion of 60 overall semester hours to continue their studies at the University of Georgia.

Students admitted as **transfer** students with **more than 30 semester hours** of transfer work must earn a cumulative GPA of 2.0 upon completion of a maximum of 60 overall semester hours to be allowed to transfer into a major (some academic departments have a higher GPA requirement) and to be allowed to continue their studies at the University of Georgia.

Academic Advising

University Studies requires academic advising for every student prior to registration. University Studies academic advisors assist students in planning their programs of study and in developing meaningful educational plans that are compatible with students' goals. Academic advisors interact individually with the students and monitor their academic progress. Advisors are available by appointment throughout the term to ensure that students' academic needs are met.

Academic Support Programs

Recognizing the significance of the first two years as a foundation for academic success, University Studies offers academic support programs to assist students as they pursue their educational goals, adjust to the collegiate environment, and engage positively in their academic pursuit throughout the freshman and sophomore years. A keystone in the department's academic support program is the course UNIV 1118: University Studies Academic Success, in which all beginning University Studies students are expected to enroll during their first semester in residence.

Student Services

Basic to the University Studies student services program is the goal of fully integrating students into the dynamic social, cultural, and intellectual life of the University, while providing specialized services and activities which offer opportunities for involvement in activities related to their overall success at the University. University Studies provides linkages with and access to the numerous and varied educational, social, cultural, and recreational resources of the University of Georgia. University Studies sponsors socials and an annual honors reception for students who have been named to the University's Dean's List or as Presidential Scholars.

To encourage interaction among students and to provide leadership opportunities, University Studies sponsors student groups and committees. The University Studies Student Activities Committee brings the student perspective to relevant issues and helps to plan various student activities. The Freshman Advisory Group gives students an opportunity to share ideas and issues related to the first-year transition into the University. The Adult/Returning Student Advisory Group brings together students returning to school while balancing work and families with their academic programs.

Community Service and Outreach

University Studies establishes networks and advisory committees, comprising community and business leaders who serve as vital partners for the advancement of educational access and academic excellence for area residents. Pre-enrollment advisement is provided to prospective students who have questions about returning to the classroom. The advisor discusses the decision to return to school, taking into consideration students' academic backgrounds and preparedness as well as their educational goals. The advisor discusses educational opportunities available to area residents. University Studies provides information, access, and academic support for new and returning students in the community and for University of Georgia employees.

University System of Georgia Independent Study

University System of Georgia Independent Study (USGIS) is an educational programs department of the Georgia Center for Continuing Education. The mission of University System of Georgia Independent Study is to offer University System academic credit courses to University System students and individuals who are interested in earning academic credit through distance learning methods and technologies. Independent Study strives to increase access to higher education by transcending barriers of geography and time, while meeting the highest academic standards, encouraging academic rigor, and requiring equivalent levels of student achievements and quality of courses regardless of delivery format. USGIS allows flexibility of registration, permitting students to register at any time and take several courses simultaneously with up to a year to complete each course.

Independent Study is ideally suited for the student who is purposeful, self-directed, and able to exercise self-discipline in completing requirements of a course. Independent Study courses are offered by academic departments located at senior institutions within the University System of Georgia. Faculty of the academic departments prepare the courses offered and grade the lessons submitted by students to satisfy requirements of the courses. Academic credit earned through Independent Study is recorded on the student's permanent record in the University of Georgia Registrar's Office and may be used for degree requirements according to the regulations of the college or university from which the student plans to graduate.

Academic Policies

University System of Georgia Independent Study students are responsible for knowing and abiding by Independent Study policies published in the USGIS online catalog and in the USGIS Student Handbook. Independent Study operates according to the Academic Honesty system of the University of Georgia. Students are responsible for seeking academic advisement prior to registration, and are subject to the academic policies of their home institutions.

University of Georgia students who take Independent Study courses taught by UGA faculty have the option of registering for resident credit. The decision to grant resident credit is made at the time of Independent Study course registration and remains in effect until the course is completed. Students must request resident credit on their registration form, and eligibility for resident credit must be verified by Independent Study prior to registration (University of Georgia grade point average of 2.0 in fifteen semester hours or more of course work at the time of registration). Resident credit earned through Independent Study may be used to satisfy the resident hours required by the University of Georgia for a baccalaureate degree. Resident credit will be included in both cumulative and overall grade point averages.

Independent Study courses offered by other University System universities must be taken for nonresident credit. Nonresident credit is considered transfer credit by the University of Georgia. Nonresident credit will be counted in a student's overall grade point average and recorded in a student's official record as transfer credit.

A student on academic or disciplinary dismissal may register for an Independent Study course with written permission from the student's academic dean. The written permission must specify the number of hours the student may earn while on academic or disciplinary dismissal. Students on academic or disciplinary dismissal may not earn resident credit for Independent Study courses.

Midterm and final examinations must be administered by college or university testing officials at official test sites, and students will be admitted to the examination only by photo identification. Students must pass the final examination to pass an Independent Study course, regardless of grades earned on lessons.

Registration and Information

To insure appropriate course selection, particularly in a major field of study, a student should seek approval and advisement from the appropriate advisor in his or her degree program prior to registering for Independent Study courses. Independent Study is not responsible for misadvisement, changes in programs of study, or other actions resulting in improper choice of courses.

To register for Independent Study, students should complete a registration form (available from the Independent Study office, Web site, or from an Independent Study bulletin). Students may register online, with credit card payment, from the USGIS Web site (www.gactr.uga.edu/usgis). Tuition fees must be paid in full at the time of registration. Fees are based on a per-credit-hour rate regardless of credit hours taken or matriculation fees assessed by the University of Georgia. Independent Study will accept an invoice, or authorization to bill, from an outside agency as long as such authorized invoices do not contain conditions to be met before payment is made (e.g., payment may not be based on successful completion of a course). University of Georgia students receiving financial aid through the University may be eligible to apply financial aid awards toward Independent Study tuition fees (for both resident and nonresident credit). UGA students receiving financial aid awards may submit a USGIS request for a fourteen-day tuition fee deferment.

In addition to lesson submission through the postal service, students have the option to submit lessons by fax or via e-mail for selected courses. Independent Study also offers several Web courses with online lesson submission. Web courses may include bulletin boards, chat rooms, links to related sites, and other resources.

Registration forms with appropriate fees should be sent to University System of Georgia Independent Study, Georgia Center for Continuing Education, University of Georgia, Athens, GA 30602-3603, or Suite 193 of the Georgia Center. Independent Study registration is continuous Monday through Friday, from 8:00 a.m. to 4:30 p.m. Registration procedures usually take approximately 30 minutes and students should plan their schedules accordingly. Office hours are from 8:00 a.m. to 5:00 p.m. Monday through Friday. The office is closed during University of Georgia holidays. For further information, contact the Independent Study office at (706) 542-3243 or 1-800-877-3243 or e-mail usgis@arches.uga.edu. The Independent Study online bulletin is available on the Web site at www.gactr.uga.edu/usgis/.

University System Center—Gwinnett

The Board of Regents of the University System of Georgia established the University System Center—Gwinnett to provide higher education in Gwinnett County. The University of Georgia, Georgia State University, and Georgia Perimeter College participate in a consortium to provide academic courses at the undergraduate and graduate levels.

The University of Georgia offers resident credit courses at the University System Center—Gwinnett that may be used as part of an approved degree program. Classes are taught by faculty approved by academic departments of the schools and colleges of the University.

Continuing education programs in a variety of academic and occupational disciplines are also scheduled at the University System Center—Gwinnett. Instruction is delivered in traditional workshop format, via distance learning, or at other locations in the area.

Additional information concerning programs of study offered at the University System Center—Gwinnett is available by contacting the University of Georgia Gwinnett Office (770) 995-6885.

Campus and Community Resources

Classic Center

A community civic and convention center complex, the Classic Center on the east end of downtown Athens features a historic fire hall as its architectural centerpiece. The facility includes a banquet/meeting hall, exhibit hall, plazas, and a performing arts theater.

Classroom and Laboratory Facilities

Almost 720 rooms support the classroom and laboratory instruction at the University of Georgia. A small number of large lecture halls combine with general classrooms, specialized classrooms, class laboratories, and a few assembly halls to provide a vast array of instructional support facilities. Another 1400 rooms house non-instructional laboratory activities.

The traditional science laboratories are located primarily on south campus in buildings known as the Science Center Complex—six buildings that house the biological sciences, chemistry, physics, geology, geography, food science, and animal sciences. All of the buildings have well-equipped laboratories for instruction and research programs. In addition, a new Life Sciences building houses research and instructional space for the biochemistry and genetics departments.

In addition to the Science Center and the Life Sciences Building, well-equipped laboratories are available throughout the campus for departmental instruction and research programs including those in the College of Agricultural and Environmental Sciences in Conner Hall, The College of Family and Consumer Sciences in Dawson Hall and Spiers Hall, and the Robert C. Wilson School of Pharmacy, the D.B. Warnell School of Forest Resources, and the College of Veterinary Medicine, each in its own building.

Modern instructional techniques require modern equipment. In many classrooms, state-of-the-art technology is used to illustrate and demonstrate instructional concepts. In most buildings, computer laboratories are available to students either in an open access environment or in support of specific courses. In some buildings, both types of computer laboratories are available to the student. The Terry College of Business and other disciplines which utilize the case-style method of teaching generally utilize case-style classrooms. The Henry W. Grady College of Journalism and Mass Communication maintains radio and television studios in addition to other modern electronic communications laboratories.

Georgia Museum of Art

The Georgia Museum of Art was established in 1945 when Alfred H. Holbrook donated his collection of 100 American paintings to the University of Georgia. The museum opened in the basement of the university library in 1948 on north campus, and took over the entire building in the early 1950s when a new library was constructed. A new museum building, at 90 Carlton Street in the Performing and Visual Arts Complex on East Campus, opened in April 1996.

In the years since Holbrook's original gift, the permanent collection has grown by gift and acquisition to more than 7,000 works of art. These works include 19th- and 20th-century American paintings, a Kress Study

Collection of Italian Renaissance paintings, and an extensive collection of prints and drawings by American, European, and Japanese masters.

The museum presents a schedule of changing exhibitions from the permanent collection and private and public collections as well as special traveling exhibitions from the United States and other countries. Lectures, gallery talks, film series, family days, and other events are scheduled to complement these exhibitions. Museum tours and special viewings of works in the permanent collection are available for university classes by request.

The Georgia Museum of Art was designated the Official State Museum of Art by the 1982 Session of the Georgia General Assembly. Partial support for the exhibitions and programs at the Georgia Museum of Art is provided by the Georgia Council for the Arts through the appropriations of the Georgia General Assembly and the National Endowment for the Arts. Hours are: Closed Mondays; Tuesday, Thursday, Friday, Saturday: 10 a.m.-5 p.m.; Wednesday: 10 a.m.-9 p.m.; Sunday: 1-5 p.m; closed on legal holidays. Admission is free.

The Museum Shop, which offers an array of art-related gift items, cards, posters, and books is open Tuesday through Saturday 11 a.m.-4 p.m.; Wednesday: 7-9 p.m.; Sunday: 1-4 p.m.; extended hours during holiday season.

Georgia Repertory Theatre

The Georgia Repertory Theatre is a fully professional repertory theatre company established as a resident theatre which presents a spring season in Athens. Presented in cooperation with Actors Equity Association, the professional actors organization, the Georgia Repertory Theatre presents new plays by established American playwrights.

The Georgia Repertory Theatre provides students and the University community and visitors with the opportunity to see the highest level professional theatre.

Libraries

The University of Georgia Libraries is composed of three major on-campus libraries—the Main Library, the Science Library and the Law Library, which is administered by the School of Law. There also are several small collections such as the Curriculum Materials Center (Education), the Georgia Center for Continuing Education Library, the Veterinary Medicine reading room, and the Music Library. The UGA Libraries' system also includes libraries at the experiment stations in Griffin and Tifton, and the marine stations at Sapelo and Skidaway.

The UGA Library is the largest university library in the State of Georgia. It is a member of the prestigious Association of Research Libraries consisting of the largest research libraries in North America and ranks in the top thirty of these libraries.

The Libraries contain more than 3.7 million books, serials and documents, and many other items, including manuscripts, photographs, drawings and newspapers. The map collection incorporates nearly 600,000 items and the microform collection numbers more than 5.6 million. These collections support the curricular and research needs of the campus and are available to library users both on the campus and across the state.

The amount and variety of resources offered by the Libraries through the Internet continues to grow. In addition to the Libraries' catalog, over 280 databases and almost 12,000 journals are available electronically. Electronic books are also available in increasing numbers and the Libraries are creating special resources by digitizing important documents. These and many other resources are available on the Libraries' web site (*www.libs.uga.edu*) and through GALILEO, the statewide electronic library (*www.galileo.peachnet.edu*).

An outstanding feature of the Main Library is the Hargrett Rare Book and Manuscript Library, a repository of rare and priceless materials. Among the collections are the works of Margaret Mitchell, the original Confederate Constitution, an outstanding Georgiana collection, an extensive collection of rare maps, and many historical manuscripts.

The Richard B. Russell Library for Political Research and Studies is located on the west side of the Main Library. The Russell Library is the only repository in Georgia directed solely toward support of scholarly research in modern political history, and it is the first repository to document modern politics and policy development in the Southeast. Given the scope and content of its collections, the Library far exceeds the importance of presidential libraries, which only document a four to eight-year administration of one person, and it has long served as a model for others collecting congressional collections. Some of the significant holdings, in addition to the Russell collection, are the papers of Secretary of State Dean Rusk; Undersecretary of Agriculture J. Phil Campbell; U. S. Senators Herman E. Talmadge, Mack Mattingly, Hoke Smith, and Thomas Hardwick; U. S. Representatives Dudley M. Hughes, Howard H. "Bo" Callaway, Williamson S. Stuckey, Sanford Bishop, Johnny Isakson; as well as governors, state legislators and officials, and political activists and commentators. The Library is also the repository for the records of the state Democratic and Republican parties, the Georgia Public Policy Foundation, Leadership Georgia, and the ACLU Chapter of Georgia. These highly regarded collections from individuals and organizations involved in politics and public policy are widely used by local, national, and international researchers.

The Walter J. Brown Media Archive and Peabody Awards Collection is available through the Media Department in the Main Library. It contains most entries to the renowned Peabody Awards, founded in 1940, as well as other programs that have been deposited over the years. With over 90,000 radio and television programs dating back to 1940, this collection offers special opportunities to explore the history and culture of the past 60 years as recorded by the broadcasting media.

Special services for students include orientation to the libraries services and collections; individual reference conferences for persons undertaking major research papers; individual stations for audio and video materials, over 100 computer workstations, and reproduction equipment.

For additional information on Libraries collections and services, contact the Office of the University Librarian, University of Georgia, Athens, GA 30602, (706) 542-0621, (*www.libs.uga.edu*).

Office of Instructional Support and Development

Director: Dr. William K. Jackson, 542-1355
Associate Director: Dr. Jay Harriman, 542-1582

OISD is a unit within Academic Affairs devoted to the advancement of instruction at the University. OISD is advised by a faculty committee, the Instructional Advisory Committee, and reports to the Vice President for Instruction. The central mission of OISD is to provide campus-wide leadership on matters relating to instruction. The programs, services, and activities of OISD are clustered within five major areas: **TA Support Services** (Workshop for Graduate Teaching/Laboratory Assistants, SPEAK Test for International Teaching Assistants, Teaching Awards, GRSC 7770 for all Teaching Assistants, TA Mentoring Program, *TA Newsletter*, *Handbook for Graduate Teaching/Laboratory Assistants*); **Faculty Development** (Lilly Teaching Fellows Program, Sarah H. Moss Fellowships, Senior Teaching Fellows Program, International Fellows Program, Governor's Teaching Fellows Program, Peer Consultation Team, Colloquium for New Faculty, Seminars and Workshops, *Teaching at UGA*, *Keys to Professional and Personal Development for Faculty*); **Course/Instructional Development** (Instructional Consulting, Seminars and Workshops, Instructional Improvement Grants, Instructional Development Laboratory, Distance Learning, Experimental Classroom); **Instructional Resources** (Instructional Media Collection, AV/Presentation

Equipment, University Cablevision, Teleconferences/Satellite Programs, Classroom Support Services, Duplication and Transfer); and **Creative Services** (Computer Graphics/Multimedia, Photography, Television, Video, and Audio Recording).

Office of International Development

The Office of International Development encourages a broader vision and understanding of the increasingly interdependent world and global economy. The Office compiles and maintains information on all faculty and staff with international experience. In addition, International Development systematically identifies opportunities with governments, development banks, and foundations to facilitate faculty involvement in international collaborative research, technology transfer, and exchange relationships with colleagues abroad, particularly in the developing nations. When faculty participate in these opportunities, the office provides assistance in proposal writing and packaging to foster these activities of mutual benefit to UGA and its international partners.

The Office of International Development serves as a clearinghouse for all international activities planned or underway at the University. The office has spearheaded UGA involvement in successful projects in Burkina Faso, Brazil, and Mexico, among many others. International Development facilitates advanced long-term training for scores of foreign students and organizes development programs for faculty and staff at UGA. The Office of International Development's community outreach takes the form of educational programs such as presentations, lectures, and co-sponsorship of international conferences.

The Office of International Development offers several services to the University community:

- Identifies and publicizes international development projects
- Links faculty with requests for technical assistance from donor organizations
- Assists in preparing proposals to international donor organizations
- Serves as liaison with international sponsoring agencies and foundations
- Organizes training programs for international students
- Assists students sponsored by federal and international agencies
- Administers language courses for faculty and staff
- Provides administrative support for Area Studies Centers
- Coordinates and monitors UGA international agreements

Performing Arts Center

The Performing Arts Center, a magnificent facility located within the University's Performing and Visual Arts Complex on East Campus, houses two music recital halls: Hugh Hodgson Concert Hall is named for the founder of the UGA School of Music and seats 1,100 in a festival-style setting where seats surround the stage; Ramsey Concert Hall is the smaller venue seating 360 and is named in honor of the late Bernard Ramsey, a major benefactor of the University. Both halls boast superb acoustics and state-of-the art recording systems.

The Performing Arts Center serves as a showcase for world-class performers and ensembles such as pianist Andre Watts, violinist Midori, the Vienna Choir Boys, and the Atlanta Symphony Orchestra. It also provides a home for UGA's faculty and student performers.

Ramsey Student Center for Physical Activities

The Ramsey Student Center for Physical Activities encompasses 430,000 square feet and includes five gymnasia, three swimming pools, three multi-purpose rooms, a climbing wall, ten racquetball courts, two international squash courts, strength and conditioning rooms, an 1/8-mile track, an outdoor equipment rental room, and an outdoor resource center. Facilities at the Ramsey Center are available to University of Georgia students, staff, faculty, and their dependents for the appropriately assessed fee.

The Ramsey Student Center is open Monday through Thursday from 6 a.m. to 12 a.m., Fridays 6 a.m. to 11 p.m., Saturdays 9 a.m. to 9 p.m., and Sundays 12 p.m. to 11 p.m.

State Botanical Garden of Georgia

The State Botanical Garden of Georgia is a public, non-profit, educational facility under the auspices of the University of Georgia. The mission is to foster appreciation, understanding, and stewardship of plants and nature through research, collections and displays, horticultural gardens, and educational programs.

The garden is located at 2450 South Milledge Avenue, one mile south of the Athens South Bypass (U.S. 129/441). Founded in 1968, the garden now encompasses over 300 acres, much of which borders the Middle Oconee River. The garden features a number of specialty gardens and collections plus five miles of nature trails. The Day Chapel is available for weddings and other special events. The Visitor Center/Conservatory features a permanent display of tropical and semitropical plants along with classrooms, offices, a gift shop, and a cafe which serves lunch daily. The garden is open daily from 8 a.m. to dusk. The Visitor Center/Conservatory is open Monday through Saturday from 9 a.m. To 4:30 p.m. and on Sundays from 11:30 a.m. to 4:30 p.m., excepting certain holidays. For more information, call (706) 542-1244.

State of Georgia Museum of Natural History

Director: Dr. Elizabeth J. Reitz, (706) 542-1663.

The Georgia Museum of Natural History contains the most extensive collection of Georgia natural history artifacts and specimens and is one of the largest natural history museums in the Southeast. It ranks within the top 50 in the nation in terms of the size of its collections and the scope of its research and service programs. The museum comprises twelve separate collection areas: Archaeology Collection (3.5 million artifacts), Botany Herbarium (200,000 plant specimens), Arthropod Collections (500,000+ pinned insects, 100,000 alcohol-preserved insects), Geology Collections (10,000 economic geology ore specimens, 10,000 mineral specimens, and 10,000 invertebrate and vertebrate fossils), Julian H. Miller Mycological Herbarium (25,000 fungi), Pollen and Plant Microspores Laboratory (a worldwide collection of fossil pollen samples), Zooarchaeology Collection (4,800 comparative reference skeletons), Herpetology (37,000 specimens), Ichthyology (325,000 specimens), Invertebrates (34,000 specimens) Mammalogy (27,000 specimens), and Ornithology (5,200 specimens).

The Museum's collections are crucial to quality education in over 50 specialized graduate and undergraduate courses in the natural sciences at the University. The educational role of the Museum extends well beyond the campus. Each year the Museum provides loans of educational materials and access to its collections to other institutions and the individuals within the University System, primary and secondary schools, and state agencies. Also, through specialized educational programs, lecture series, and short courses, the Museum reaches thousands of individuals and groups throughout Georgia each year.

University Bookstore

The University Bookstore offers a bright, contemporary atmosphere featuring spacious aisles, well-stocked shelves, and expedient check-out lanes. Designed to serve the students, faculty, and staff of the University, the store maintains a complete stock of all course-related supplies and textbooks, new and used, as well as a large inventory of general reading books. Visitors to the store will also find a wide selection of University of Georgia fashion apparel and gift items, snacks, sundries, and campus life accessories. Located next to the Tate Student Center and across from Sanford Stadium, the Bookstore is open Monday through Thursday, 8:00 a.m. to 7:00 p.m.; Friday, 8:00 a.m. to 5:00 p.m.; and Saturday, 11:00 a.m. to 4:00 p.m.

Special Services and Facilities

Special services and facilities of the University of Georgia include community education services, various institutes, the Georgia Center for Continuing Education, the University Press, Athletic Association, and Alumni Association. Some of these are described below.

The Georgia Center for Continuing Education

Associate Vice President for Public Service and Outreach: Lorilee Sandmann, (706) 542-3451

The Georgia Center for Continuing Education seeks to serve the learning needs of adults and organizations by providing University-level lifelong and professional education. One of the major functions of the University is to offer credit and non-credit continuing education programs on campus and throughout the state. The Center draws on the full resources of the University, working closely with the faculty and participating groups to evaluate its various programs and design new services such as those provided for distance learning.

The Georgia Center building on campus provides, in addition to administrative offices for the program, conference facilities for up to 1800, two computer labs, as well as studios and production areas for video, WUGA-FM public radio, lodging for approximately 300 adults, the Center Commons Coffee Shop, and the Savannah Room Restaurant. The Center also provides a variety of other media support services for continuing education and the service function of the University of Georgia, including satellite uplink and downlink communications and an electronic classroom connected to the statewide GSAMS system.

EDUCATIONAL PROGRAMS

The Georgia Center provides academic credit courses and academic support programs for students who pursue their education in traditional and nontraditional patterns and provides intensive English language instruction for international students.

See the Opportunities and Programs section for information about the following programs:

American Language Program

See page 73.

University Studies

See page 77.

University System of Georgia Independent Study

See page 79.

Community Education Programs

Community Education Programs provides non-credit short courses, including computer training through workshops and courses. Additionally, every semester, over 80 different courses, ranging from Conversational Italian to Preparing for the GRE, are taught in the evening. For more information, call (706) 542-3537.

Conferences and Professional Programs

Conferences and Professional Programs is involved extensively in the development, delivery, and assessment of non-credit instructional programming locally, statewide, regionally, and nationally within a broad range of academic disciplines and occupational competencies including Business Management and HRD, Communications, Education, Family and Consumer

Sciences, Agriculture, Humanities and Social Sciences, and professional education in Law, Forestry, Pharmacy, and Veterinary Medicine. Additionally, the Center has continuing education staff located in Griffin and Tifton and at the University Gwinnett Center. Instruction is delivered via workshops, conferences, seminars, certified job-related curricula, and distance learning technologies, which include compressed video, satellite teleconferences, and web-based computer conferences. For more information, call (706) 542-2335.

Educational Services

The Georgia Center develops, produces, and distributes educational media for adult learners around the state, and throughout the nation. The Georgia Center provides cultural and educational television productions for Georgia Public Television and also operates WUGA-FM, the University of Georgia's public radio station, an affiliate of National Public Radio and Georgia Public Radio.

Through membership in national organizations, the Center has access to high quality teleconferences from more than 200 institutions of higher education. The Center is also a member of the Georgia Statewide Academic and Medical System—a two-way video instructional system that connects the Center with some 250 other sites in the state for the purpose of information and instruction. With state-of-the-art satellite uplink capability, the Center can provide educational services to some 2,000 downlink sites in the state of Georgia and to the entire nation.

The Center participates in providing WEB-based courses through the Southern Regional Electronic Campus, Georgia G.L.O.B.E., and the University System of Georgia Independent Study Program. The Center delivers and markets a complex, comprehensive media program including not only television and radio, but also print design and production as well as self-directed, interactive learning packages available on the Internet. For information, call (706) 542-3554.

HOTEL AND FOOD SERVICES

The Georgia Center Hotel and Food Services provides support primarily for adult students attending conferences. University faculty, departments, and visitors are also encouraged to use the Georgia Center. The Center's Savannah Room Restaurant and Coffee Shop are open to the public as well as the University. The Savannah Room Restaurant is open for lunch on Mondays -Fridays and Sunday and for dinner on Mondays - Saturdays. The Coffee Shop is open daily for breakfast from 7 a.m. - 9:30 a.m., lunch from 11 a.m. - 2 p.m., and has sandwiches, salads, and snacks available until 8:30 p.m. The Center welcomes inquiries concerning special banquets, receptions, department and unit events, and other activities. Please call 542-2654 for information. Restaurant reservations may be made by contacting 542-6341; for hotel reservations, call 542-1181.

Centers and Institutes

CENTER FOR ADVANCED ULTRASTRUCTURAL RESEARCH

Director: Dr. Mark A. Farmer, 542-4080
The Center for Advanced Ultrastructural Research serves the University System by providing a repository of facilities and expertise to assist in pursuing research and instructional needs employing light, fluorescence, and electron microscopy. Facilities include two TEMs, one SEM, two confocal microscopes, X-ray microanalysis, and image processing and analysis workstations. Formal courses in electron microscopy are offered through the Division of Biological Sciences.

CENTER FOR APPLIED ISOTOPE STUDIES

Director: Dr. John E. Noakes, 542-1395
The Center for Applied Isotope Studies is a multidisciplinary group dedicated to research and development in nuclear analytical methods and system technology. The primary activities of the center are to work cooperatively with the academic, scientific,

and industrial communities through programs of applied and basic research. Emphasis is placed on applied research, assisted by a unique array of nuclear analytical tools, directed toward the resolution of critical contemporary problems. One of the highest priorities of the CAIS is to direct its programs of research to address environmental problems and issues, focusing on the development of new analytical methods and systems technologies for scientific and industry application. A state-of-the-art service laboratory is maintained by the CAIS for radiocarbon dating, stable isotope measurements, trace element determinations, and low-level detection of radionuclides for environmental monitoring and assessment. The CAIS also serves as a reference center, available to UGA students and faculty, for research design in nuclear methods. The Center is located at the University's Research Park in the Center for Applied Isotope Studies Building.

CENTER FOR ARCHAEOLOGICAL SCIENCES

Director: Dr. George A. Brook, 542-2856
The Center for Archaeological Sciences promotes and coordinates research between the humanities—archaeology, anthropology, and art history—and the sciences—geology, geography, physics, geochemistry, chemistry, and biology. The center coordinates the research of University scholars in fields relating to archaeology and art history, facilitates collaboration with experts outside the University, serves as a resource center of laboratory equipment and technical support for archaeologists and art historians worldwide, and coordinates an interdisciplinary undergraduate and graduate certificate program in archaeological sciences.

CENTER FOR ASIAN STUDIES

Co-Directors: Dr. Thomas Ganschow, 542-2053; Dr. Shanta Ratnayaka, 542-5356
The Center for Asian Studies promotes and guides academic programs and exchanges on Asia for students and faculty. The Asian programs focus on language and area studies and involve faculty and course offerings from various units of the University. Specific activities include the following: (1) expanding and improving instructional programs in Asian languages (presently Chinese, Japanese, and Korean) and area studies (presently East and North Asia) and promoting and facilitating more exchange and involvement of students and faculty with Asia through exchange agreements (presently China and Japan); (2) developing and arranging speakers' and visitors' programs of distinguished Asianists to address and exchange ideas with students, faculty, and community on Asian topics; (3) promoting and facilitating collaborative research activities and programs with Asian scholars and Asian research and educational institutions; (4) developing library, audio-visual, and related instructional and research materials and facilities; and (5) planning and applying for external funding for the expansion of Asian Studies at UGA.

CENTER FOR BIOLOGICAL RESOURCE RECOVERY

Director: Lars G. Ljungdahl, 542-7640
The Center for Biological Resource Recovery is composed of investigators from the departments of Biochemistry, Botany, and Microbiology at the University and from the Richard B. Russell Agricultural Research Center. The Center is committed to extending the biotechnology required for the utilization of microorganisms as inexpensive and energy-efficient catalysts for converting our main renewable resource, biomass, to desired products such as fuel and industrial feedstock chemicals. Studies include the physiology, biochemistry, genetics, and ecology of bacteria and fungi that are important in agricultural and industrial processes involving fermentations, forestry, pulp and paper, agriculture, and other biochemical industries.

COMPLEX CARBOHYDRATE RESEARCH CENTER

Co-Directors: Dr. Peter Albersheim, 542-4404; Dr. Alan Darvill, 542-4411
The Complex Carbohydrate Research Center

(CCRC), a Department of Energy-funded Center for Plant and Microbial Complex Carbohydrates and a National Institutes of Health Resource Center for Biomedical Carbohydrates, studies the structures and functions of complex carbohydrates of plants, microbes, and animals. CCRC scientists investigate the chemistry, physiology, and developmental and molecular biology of biologically important complex carbohydrates to elucidate their physiologically active role in normal growth and development, disease processes, and a variety of regulatory processes. The involvement of complex carbohydrates in most cell activities makes understanding their structures and functions essential to may fields of basic research and biotechnology as well as human health issues and the biomedical sciences. In the center's well-equipped 80,000-square-foot home on Riverbend Road, CCRC scientists, representing a broad range of expertise, develop and use advanced analytical techniques in their work, including mass spectrometry, nuclear magnetic resonance spectroscopy, computer modeling, tissue culture, immunocytochemistry, recombinant genetics, and chemical and enzymatic synthesis. The CCRC provides analytical services to scientists, offers hands-on extramural laboratory training courses each summer for scientists from academia and industry, and develops computer software to assist in the study of complex carbohydrates. CCRC personnel are presently engaged in over 150 collaborations with scientists in Georgia, 29 states in the U.S., and in 17 countries. The CCRC also operates a Georgia Research Alliance Regional NMR Center providing the analytical capabilities of a high-field 800-MHz NMR spectrometer to scientists at Georgia's research universities. CCRC faculty hold joint appointments in the departments of biochemistry and molecular biology, chemistry, botany, and plant pathology; students can apply to conduct their graduate research, undergraduate projects, or internships with center faculty. Postdoctoral fellows and visiting scientists from around the world regularly come to the CCRC to gain expertise by working on research projects of interest. The center is supported by federal, state, and industrial funds and has annual research funds of about $4.5 million.

COMPUTATIONAL CENTER FOR MOLECULAR STRUCTURE AND DESIGN

Director: Professor Norman L. Allinger, 542-2043

Co-Director: Professor J. Phillip Bowen, 542-2054

The Computational Center for Molecular Structure and Design, originally dedicated December 8, 1992, by Governor Zell Miller, is now located in the new state-of-the-art computational chemistry building. Research in the Center is varied but focused primarily on the use of computers for understanding, calculating, and predicting molecular structures and their interactions. The accurate predictions of the shapes and properties of newly designed compounds, prior to any costly laboratory preparation, is important. The development of computational chemistry software, particularly molecular mechanics methods, is being pursued actively. The widely used MM2 and MM3 programs were developed by Professor Allinger and co-workers. Given the importance of understanding structure-function relationships in pharmaceutical, agricultural, and biomedical research, computer-assisted drug design application projects are helping with drug discovery projects, specifically in the areas of novel anti-tumor compunds and NMDA antagonists. Bioinformatics and computer modeling has been used to suggest potential, new therapeutic approaches for the control of AIDS.

CENTER FOR COMPUTATIONAL QUANTUM CHEMISTRY

Director: Dr. Henry F. Schaefer III, 542-2067

The Center for Computational Quantum Chemistry seeks to develop theoretical and computational methods through mathematical models to describe and understand the movement and function of electrons in molecules and to apply theoretical methods to significant problems of broad chemical interest. Some of the theoretical methods under development include the configuration interaction, coupled cluster, and Brueckner methods and associated analytic gradient techniques. Other theoretical work involves density functional theory, the evaluation of electron repulsion integrals, and the treatment of relativistic effects. Currently applications to several areas of chemistry are of special concern: (1) the potential energy hypersurfaces that govern elementary gas-phase chemical reactions, including systems pertinent to combustion; (2) fundamental problems in physical organic chemistry involving, for example, carbenes and other biradical species and systems such as the [n] paracyclophanes and [10] annulene; (3) organosilicon chemistry, specifically the prediction and understanding of the properties of silicon analogs of common and unknown hydrocarbon compounds; (4) hydrogen bonding in systems as complicated as the guanine-cytosine base pair; (5) the study of molecular ions and ion clusters pertinent to atmospheric chemistry.

CENTER FOR ECONOMIC EDUCATION

Director: Dr. Ronald Vansickle, 542-7265

The Center for Economic Education, an ongoing program of the Department of Social Science Education, with assistance from the College of Business Administration, exists to increase the level of economic literacy in Georgia through the improvement of economics instruction in Georgia schools. The center provides in-service teacher training, develops instructional materials, and encourages innovation in economics education.

CENTER FOR ENVIRONMENTAL BIOTECHNOLOGY

Director: Dr. Robert E. Hodson, 542-7849

The Center for Environmental Biotechnology, a part of the Institute of Ecology, is made up of an integrated team of scientists, staff and graduate students. The center has as major objectives to address basic questions in microbial ecology via a series of laboratory, field and modeling studies, to develop protocols for risk assessment and product advisement using bioengineered organisms, and to develop long-term linkages between university researchers and industrial users of bioengineered microbes and products.

CENTER FOR FOREST BUSINESS

Director: Bob Izlar, 542-6819

The Center for Forest Business, housed in the Daniel B. Warnell School of Forest Resources, was established in 1997 to integrate the business aspects of forest production and processing with the biological and ecological requirements of sustainable production. The Center provides timely, relevant education, research, and service programs to business and industry leaders, forest landowners, and students. Its mission is to provide national leadership in education, research, and service to forest industry and private landowners in these areas: the integration of sound forest business principles and practices with contemporary biological and quantitative methods to achieve sustainable forest production; the investigation of forest resources and forest industry alternatives that are economically competitive in the global marketplace; and the proposal of market-based solutions to forest resource problems and opportunities. Principal activities of the Center will focus on: a graduate program which educates professionals who will successfully occupy senior-level positions in private industry and public organizations; research to improve planning and provide financial analyses to forest industry and private forest landowners; and service programs to educate professionals and organizations about the financial, biological, and social components of intensive forest production.

GERONTOLOGY

The University of Georgia has a strong commitment to gerontology training. At present, training in gerontology is primarily at the graduate level although some opportunities for undergraduates are available. The Gerontology Center directs graduate training and awards a Graduate

Certificate of Gerontology.

The Gerontology Center. The major purpose of the Gerontology Center is to coordinate and promote activities relating to aging throughout the University. The center's primary responsibilities are to coordinate graduate training and research, and to promote faculty development in gerontology. A Faculty of Gerontology is associated with the Gerontology Center consisting of approximately 50 faculty members from 22 different academic departments on campus. Dr. Leonard W. Poon is the Gerontology Center Director, and Dr. Everett Lee and Dr. Philip A. Holtsberg are Assistant Directors.

Undergraduate Opportunities in Gerontology. Honors students in good standing and who hold at least sophomore rank are eligible to apply for admission to the Aging Studies Program, jointly sponsored by the Gerontology Center and Honors Program. Interested students should contact Dr. Philip A. Holtsberg, Assistant Director of the Gerontology Center (542-3954), for additional information. There are also opportunities for undergraduate students to enroll in courses and practica relating to the elderly. Interested students should contact their respective department heads, or Dr. Leonard W. Poon, Chairman of the Faculty of Gerontology and Director of the Gerontology Center (542-3954).

CENTER FOR THE STUDY OF GLOBAL ISSUES, GLOBIS

Director: Han S. Park, 542-6633

The Center for the Study of Global Issues (GLOBIS) serves as a mechanism for coordination and promoting international and interdisciplinary research, service and instruction in global studies. The focus of GLOBIS is on issues that are distinctly international, comparative or transnational in character such as the environment, political and economic development, human rights and social change. The primary goals of GLOBIS are to work toward the establishment of new theories and practical policies to confront the most pressing problems of the day and to enrich the training of students in global studies. These goals are met by conducting research and educational activities that examine recent global economic, political and socio-cultural trends. GLOBIS organizes conferences, sponsors lectures by visiting scholars and hosts scholars wishing to do research at the University of Georgia. GLOBIS also runs the annual summer study abroad program in Verona, Italy, and administers the Certificate in Global Studies to qualified undergraduate and graduate students throughout the University. The Center's programs are located on campus at the University of Georgia and abroad at regional offices in Verona, Italy and Kyoto, Japan. These branch offices operate as GLOBIS' coordinating centers for the conduct of off-campus research and educational programs conducted in Asia and Europe. Thus, all of the Center's activities are truly international and interdisciplinary because of the participation of UGA faculty and students from many disciplines, but also participation of professional colleagues and students from other countries.

HOUSING AND DEMOGRAPHICS RESEARCH CENTER

Directors: Dr. Anne L. Sweaney, 542-4877; and Dr. Robert J. Cleveland, (912) 743-0370

The Housing and Demographics Research Center (HDRC) provides sound housing research, promotes a more rational regulatory environment for the building community, and disseminates research findings to policy makers, interested parties and the general public. The HDRC was created in partnership with the Research Center of the National Association of Home Builders and was officially recognized as a center in June 1996. It is part of a network of housing research centers located regionally at major research universities. The faculty have garnered support from the Athens-Clarke County Government, Department of Community Affairs, Georgia Department of Human Resources, Georgia Department of Transportation, the National Association of Housing Counselors and Agencies, Inc., and SMART House Limited Partnership, Inc., among others.

CENTER FOR HUMANITIES AND ARTS

Director: Dr. Betty Jean Craige, 542-3966
The Center for Humanities and Arts promotes scholarly inquiry and creative activity in the humanities and the arts by supporting faculty research grants, lectures, symposia, publications, visiting scholars, visiting artists, collaborative instruction, and public programs, exhibitions, and performances. The humanities may be understood as investigation into the philosophical, historical, social, ethical, legal, aesthetic, religious, and ideological implications of our knowledge of the world; humanistic research includes many kinds of scholarship, such as history, criticism, theory, interpretation, and translation. The arts may be understood as the expression of human experience in various modes, such as literature, theater, music, dance, film, painting, printmaking, sculpture, and design. Under its Humanities-Science Interface Initiative, the Center facilitates intellectual exchange and scholarly collaboration among humanists, social scientists, and scientists in the exploration of social and scientific values. In its Initiative for Global Understanding, the Center addresses cultural and political issues related to the emergence of a global society.

CENTER FOR INSURANCE EDUCATION AND RESEARCH

Director: Dr. Sandra G. Gustavson, 542-4290
The Center for Insurance Education and Research is designed to conduct research on questions of short- and long-term interest to the insurance community and to provide periodic seminars and conferences on issues facing that industry. The center sponsors continuing education programs for the insurance industry in Georgia and gives financial support to undergraduate and graduate students, as well as faculty of risk management and insurance.

DEAN RUSK CENTER FOR INTERNATIONAL AND COMPARATIVE LAW

Director: Professor Thomas J. Schoenbaum, 542-5140
The Dean Rusk Center for International and Comparative Law was founded in 1977 as part of the School of Law to improve the effectiveness of relations among citizens, private sector entities, and government at the local, state, federal, and international levelş. Using advanced electronic, information-processing techniques, the center's professional staff and part-time researchers mobilize university, business, and governmental resources to develop theoretical and practical approaches to improve the efficiency of governance, trade, and investment. On occasion the center also helps implement the approaches by providing the private and public sectors with essential manpower and information. In the past the Dean Rusk Center has developed several major initiatives for federal action concerning North American cooperation and overseas trade regulation and representation. It has also analyzed new approaches for expanding Georgia agricultural exports. The center publishes research reports, holds conferences, and sponsors research for Georgia citizens that cover fiscal and monetary policy, international arrangements, and domestic affairs.

JAMES M. COX CENTER FOR INTERNATIONAL MASS COMMUNICATION TRAINING AND RESEARCH

Director: Dr. Lee Becker, 542-5023
The Center for International Mass Communication Training and Research serves to facilitate international mass communication training and research programs in which scholars from the United States and foreign countries, students, and mass communication professionals can cooperate. The center helps to coordinate efforts to improve the state of knowledge in the field and to encourage practical training, education, and service projects.

CENTER FOR INTERNATIONAL TRADE AND SECURITY

Director: Dr. Gary K. Bertsch, 542-2985
The Center for International Trade and Security is an interdisciplinary and interuniversity research, teaching, and service project designed to promote more informed trade and security policies and further national and state economic and security interests. Its primary function is to study and produce policy-relevant research on U.S. and international economic and security issues. The center encourages and coordinates collaborative research, teaching, and service related activities within the university, the state, nation, and international community. Through e-mail (cits@arches.uga.edu) and the home page (www.uga.edu/~cits) the Center provides networking and information worldwide.

CENTER FOR LATIN AMERICAN AND CARIBBEAN STUDIES

Director: Dr. Brent Berlin, 542-9079
Program Coordinator: Dr. Fausto O. Sarmiento, 542-9079
The Center for Latin American and Caribbean Studies (CLAC) coordinates interdisciplinary research, programmatic campus outreach and public service programs dealing with science, environment, and culture of Latin America and the Caribbean. CLACS is a catalyst of scholarly discussion of Hispanic and Latino issues in Georgia and bridges the gap of language and culture with countries of the region, promoting academic exchange programs, summer institutes, field courses, and collaborative agreements among prestigious Latin American universities and UGA. The Center offers a certificate program in Latin American Studies for undergraduate students and Field Travel Awards for graduate students to do research in Latin America. Through lectures, seminars, panels, travelogues, film festivals, Ronda Latina, Hispanic gala and exhibitions, CLACS brings together faculty from all UGA colleges and schools engaged in work related to this region. Through the e-mail list (clacs-l@uga.cc.uga.edu) and the home page (www.uga.edu/~clacs) the Center provides networking and update information for the Latin Americanists on campus.

CENTER FOR MARKETING STUDIES

Director: Dr. Thomas W. Leigh, 542-3540
The Center for Marketing Studies, established in 1986, seeks to advance professional marketing education and to identify and develop new programs and methods which will better serve the marketing community's needs for education and information. The Master of Marketing Research Program, a nationally recognized graduate program, is administered by the center which is part of the Terry College of Business. The center also works to maintain and strengthen relations with the business community.

CENTER FOR METALLOENZYME STUDIES (CMS)

Co-Directors: Dr. Michael K. Johnson, 542-1949; Dr. Michael W. Adams, 542-1949
The Center for Metalloenzyme Studies (CMS) was established to encourage cooperative research on related biochemical problems by gathering basic knowledge about the working of metalloenzymes that catalyze a variety of life-supporting reactions like nitrogen fixation, sulfur metabolism, carbon monoxide metabolism, and hydrogen production. Using the latest technologies and state-of-the-art analytical equipment, faculty researchers and postdoctorate and graduate students are able to teach and train in genetics, enzymology, fermentation technology, and anaerobic techniques.

THE PLANT CENTER

Director: Dr. Lee H. Pratt, 542-3732
The Plant Center is designed to foster and support interactions between those members of the University of Georgia research community who share a common interest in cellular and molecular aspects of plant growth and development, in plant genome organization and function, in the application of molecular and genetic tools to improve cultivated plants, and in organisms that interact with plants. The Plant Center hosts a regular seminar series, organizes an annual

scientific retreat to encourage the development of interdisciplinary research, and sponsors symposia and technical workshops.

POULTRY DIAGNOSTIC AND RESEARCH CENTER

Director: Dr. S.H. Kleven, 542-5644

The Poultry Diagnostic and Research Center carries out basic and applied research programs on the diseases which are of economic importance to the poultry industry of Georgia. Diagnostic, laboratory, and consultative services are provided to individuals and groups in all phases of poultry production.

CENTER FOR PRIVATE ENTERPRISE

Director: Dr. Dwight R. Lee, 542-1311

The Center for Private Enterprise has as its major mission the furtherance of understanding of the principles of private enterprise. The center engages in research studies that demonstrate the benefits of economic decisions made in a competitive environment and in teaching undergraduate and graduate students the principles of private enterprise, the theoretical underpinnings of market economies, and other appropriate subjects. In addition to its teaching research functions, the center also carries on an active service program involving public lectures and seminars dealing with the private enterprise system

CENTER FOR REMOTE SENSING AND MAPPING SCIENCE

Director: Dr. Roy A. Welch, 542-2359

The Center for Remote Sensing and Mapping Science (CRMS) undertakes research and training in the fields of remote sensing, geographic information systems (GIS), photogrammetry, digital image processing, and computer graphics, particularly as applied to the physical and biological sciences. Typical research topics include quantitative methodologies for measuring soil erosion from agricultural lands by photogrammetric techniques, mapping environmental disturbances from aerial photographs and satellite images, development of integrated image processing/GIS software and advanced technologies for monitoring the earth's surface from digital image data. Close associations are maintained with remote sensing organizations and scientists in Canada, Europe, South America, and Asia. The CRMS provides technical assistance to universities and to local, state, and federal agencies.

SELIG CENTER FOR ECONOMIC GROWTH

Director: Jeffrey M. Humphreys, 542-4085

The Selig Center serves the state by bringing college resources to bear on economic growth and development. The Selig Center brings widespread recognition to the University of Georgia through its economic forecasts, major studies, publications, press releases, information services, and data products.

The Selig Center houses the Georgia Economic Forecasting Project, which is primarily concerned with projecting Georgia's future growth. The Center holds a series of economic outlook conferences in Albany, Atlanta, Augusta, Brunswick, Columbus, Macon, Savannah, and Thomasville. The conferences and the *Georgia Economic Outlook* publication provide forecasts and detailed commentary on eight economic sectors: agriculture, construction, public utilities, financial markets, manufacturing, services, hospitality, and trade. The Georgia Economic Forecasting Project also forecasts U.S. and regional retail sales, with special emphasis on the back-to-school and holiday shopping seasons, as well as total and black buying power for the U.S., all states, and Georgia's eight MSAs and 159 counties.

The Selig Center is a primary source of economic information for business leaders, the media, government agencies, and the general public. The Center serves as an advisor/consultant to many groups, including the Atlanta Committee for the Olympic Games, the Georgia World Congress Center Authority, the Northeast Georgia Surface and Air Transportation Commission, the 316 Alliance, Inc., *Georgia Trend* magazine, the Athens Convention and

Visitor's Bureau, and the Athens Chamber of Commerce.

The Selig Center is a founding member of the Association for University Business and Economic Research and is a voting member of the National Retail Federation. The Selig Center is an official cooperating agency with the U.S. Bureau of Economic Analysis and serves a similar function for the Construction Statistics Division, U.S. Bureau of the Census.

The Selig Center publishes *Georgia Business and Economic Conditions*, a bimonthly business periodical, and the *Georgia Statistical Abstract*, a comprehensive collection of basic business, economic, and demographic statistics. Visit our home page on the World Wide Web at *www.selig.uga.edu*.

CENTER FOR SIMULATIONAL PHYSICS

Director: Dr. David P. Landau, 542-2908

The Center for Simulational Physics functions as a center for research and training in simulational science with emphasis on the use of high performance computing within a distributed, heterogeneous environment. Because of this focus, close interaction with the University Computing and Networking Services is maintained, and collaborative research programs with major institutions in the United States and Europe are developed. Specially designed courses and a weekly seminar series and annual workshop are organized. The center's staff consists of research and adjunct professors, visiting research scientists, and postdoctoral associates.

CENTER FOR UNDERGRADUATE RESEARCH OPPORTUNITIES (CURO)

Coordinator: Dr. Pamela B. Kleiber, Assistant Director of the Honors Program, 542-0530; 123 Holmes/Hunter Academic Building; *www.uga.edu/honors/curo.*

The Center for Undergraduate Research Opportunities (CURO) is funded by a FIPSE (Fund for Improvement of Post Secondary Education) grant and is administered by the Honors Program. CURO's overarching goal is to support undergraduate research through various activities. CURO offers introduction to undergraduate research seminars for qualified students within and outside the Honors Program. CURO also sponsors an annual symposium that highlights the undergraduate researchers and their graduate student and faculty sponsors. CURO issues a Call for Abstracts each fall, inviting undergraduate researchers to submit an abstract of a paper, oral presentation or poster session. Performing and visual artists also are invited to participate. An artist's statement regarding their work is requested in lieu of an abstract. CURO maintains a listing of University of Georgia faculty interested in working with undergraduate researchers. CURO administers the nomination process for the Regents Undergraduate Research Awards.

BUSINESS OUTREACH SERVICES

Director: Hank Logan, 542-6762

Business Outreach Services is devoted to improving Georgia's economy by educating and advising Georgians, both individually and collectively, on ways to better manage their businesses and to further develop the economies of their communities. The innovative, university-based extension service provides assistance through one-to-one consultation, continuing education, and applied research to business-owners and aspiring entrepreneurs. The organization also offers educational opportunities and consultation to community and regionally-based economic development groups. Supported by the University of Georgia and the U.S. Small Business Administration, business Outreach Services provides business-management and regional economic development assistance to Georgians through its network of 19 offices located throughout the state.

A broad array of services are offered within four general programmatic areas: regional economic development services, minority business enterprises, international expansion support services, and the **Small Business Development Center** program. The staff of professional business consultants, most of whom hold advanced degrees in business and management, not only offer consultation and educational opportunities to help with business start-ups but also aid larger businesses by providing information and consultation on such topics as exporting. Among the many other services offered are extensive research and marketing studies as well as geographical information system maps and statistical reports for individual business-owners, who might be trying to decide whether to expand or relocate, and for community leaders interested in improving local economies.

AFRICAN STUDIES INSTITUTE

Director: Lioba Moshi, 542-5314
The African Studies Institute was established at the University of Georgia in 1987 as the African Studies Program. It was re-named the African Studies Institute (ASI) in July 2001. As an Institute, it plays an important role at the University of Georgia disseminating knowledge and information about Africa, its people, geography, culture, languages, economic development, agriculture, education and social structure. The basic goals of the Institute include teaching courses with a rich African content, conducting research in and about Africa and creating study abroad and exchange programs between African institutions and the University. These goals will be met by the Institute's commitment to develop resources that meet research, teaching, public service and outreach goals with an expectation for concrete results.

INSTITUTE FOR AFRICAN AMERICAN STUDIES

Director: Dr. R. Baxter Miller, 542-5197, 542-3071 FAX, www.uga.edu/~IAAS/
The Institute for African American Studies provides a central focus to study the impact of African American contributions upon human culture and social inquiry.

The Institute is dedicated to the production of creative research on the achievements of African Americans and to exciting instruction for a diverse community of thinkers. In addition, the Institute serves as a cultural repository and resource for the citizenry of Georgia.

The Institute offers a certificate upon completion of four courses offered by the Institute, plus an additional two courses approved by the Institute's Director. A major is being submitted to the Board of Regents. For further information, contact the Director of the Institute for African American Studies.

INSTITUTE FOR BEHAVIORAL RESEARCH

Director: Dr. Rex Forehand, 542-1806
The Institute for Behavioral Research is a multidisciplinary research organization. Its purpose is to bring together the expertise of faculty members and graduate students from such areas as Arts and Sciences, Business, Education, and Family and Consumer Sciences. The Institute is composed of the Survey Research Center, Center for Family Research, Center for Research on Behavioral Health and Human Services Delivery, Contextual Research Group, and Methods and Modeling Group.

BIOMEDICAL AND HEALTH SCIENCES INSTITUTE

Director: Dr. Harry A. Dailey, 542-5922
The mission of the University of Georgia's Biomedical and Health Sciences Institute (BHSI) is to facilitate the coalescence, expansion, and support of interdisciplinary scientific activities at UGA in the biomedical and human health fields. The Institute is designed to increase the breadth and intensity of the Institution's biomedical and health-related research, interconnect UGA programs in these fields, and assist in securing extramural funding. In addition to seeking support for research, the Institute serves as a catalyst for collaboration in the development of new interdisciplinary undergraduate courses and graduate degree programs, new sources of funding for scholarships, and other opportunities for UGA students in these fields. The Institute also seeks meaningful collaborations in research, service, and teaching with universities, state organizations, and other entities in the biomedical and health fields.

INSTITUTE OF CONTINUING JUDICIAL EDUCATION OF GEORGIA

Director: Mr. Richard D. Reaves, 542-7491
The Institute of Continuing Judicial Education of Georgia, housed at the University of Georgia School of Law, plans and conducts more than 50 seminars each year for the basic professional development and continuing education of judges and other personnel of the Georgia court system. It supports participation by selected personnel of the judicial branch in programs conducted by national training agencies. This past year its programs reached more than 3,000 judges and court support personnel.

INSTITUTE OF CONTINUING LEGAL EDUCATION IN GEORGIA

Executive Director: Mr. Lawrence F. Jones, 369-5664
The Institute's administrative staff is housed in the historic Lumpkin House on Prince Avenue in Athens, Georgia, with the print shop staff in the A.G. Cleveland Building directly behind the Lumpkin House. The Institute was organized in 1965, and is a consortium of the Law Schools of Georgia, Emory, Mercer, and Georgia State Universities and the State Bar of Georgia. Approximately 155 live and 76 video replayed programs in over 50 areas of the law are conducted each year with an approximate attendance of 21,630 (includes attendance at video replays of ICLE seminars). Two of these programs are held in Athens at the Georgia Center. The other seminars are conducted in cities throughout Georgia. The video replay network makes programs available to the majority of Georgia attorneys with a minimum of travel. The Institute has video tapes available to law firms, local bar associations and colleges to assist attorneys in getting their 12 hours of mandatory training each year. Approximately 2,270 registrants take advantage of this program. More than 20 specialized seminars are transmitted to Atlanta live via satellite. These programs are co-sponsored with national CLE providers such as the American Bar Association and Practicing Law Institute. More than 237 persons attend these co-sponsored programs. The Institute print shop prepares more than 150 publications per year.

INSTITUTE OF ECOLOGY

Director: Dr. C. Ronald Carroll, 542-2968
The Institute of Ecology, long known for its international research reputation, was approved as an academic school of ecology in 1993. The Institute offers 23 courses for undergraduates and encourages students seeking a B.S. degree in Ecology to complement their classroom education by obtaining credits for internship and research experience.

In addition to lab facilities on campus, students can obtain field research experience at three local sites administered through the Institute of Ecology. The Horseshoe Bend Research Area adjacent to campus, the McGarity Wetlands Preserve in the flood plain of the Alcovy River, and the Odum Watershed, a self-contained 120-acre (49 hectare) watershed approximately 20 miles from campus. The Institute of Ecology maintains collaborative relationships with several other regional research laboratories. Tropical intern and research opportunities are available in Costa Rica and Ecuador. The Institute has a long-standing relationship with the Savannah River Ecology Laboratory in Aiken, S.C., the U.S. Forest Service's Coweeta Hydrological Laboratory near Franklin, N.C., and the Joseph Jones Ecological Research Center in southwest Georgia. The Institute supports research in marine and freshwater ecology, ecology, ecological toxicology, evolutionary ecology, conservation biology, landscape ecology, restoration ecology, agroecosystem ecology, systems ecology, and resource management.

For a description of the Bachelor of Science in Ecology core curriculum, see page 211 in this Bulletin.

CARL VINSON INSTITUTE OF GOVERNMENT

Director: James G. Ledbetter, 542-6191.
The Vinson Institute conducts an interdisciplinary program designed to improve the knowledge and skills of elected and appointed Georgia state and local government officials and others. With expertise in government, public administration, public law, public finance, environmental protection, public management, and personnel administration, Institute faculty formulate and conduct over 850 training programs and conferences each year, offer technical assistance to public officials, and engage in an extensive research and publications program. A program in citizen education offers teachers, students, and citizens of all ages a variety of services that promote better understanding of governmental structure and processes. The Vinson Institute also cooperates with the Department of Political Science in the administration of the Master of Public Administration degree.

INSTITUTE OF HIGHER EDUCATION

Director: Dr. Delmer Dunn, 542-3464
The Institute of Higher Education has been organized to work with other educational agencies and organizations in the development of higher education. The Institute provides a diversity of services to two-year and four-year colleges in the state and surrounding region, cooperates with other institutions in statewide, regional, and national studies, and participates in numerous planning, development, assessment, and evaluation projects.

J. W. FANNING INSTITUTE FOR LEADERSHIP

Director: David P. Mills, 542-1108
The mission of the J. W. Fanning Institute for Leadership's is to serve people who desire to develop leadership within themselves and within others. The institute develops curricula and resources and conducts leadership programs for potential, emerging, and established community, youth, and organizational leaders. Serving as a central university-based source of knowledge and information about leadership, the Fanning Institute prepares people of all ages, in all types of communities, from all walks of life, to identify, address, and meet current and future challenges.

SCHOOL OF MARINE PROGRAMS

Director: Dr. Robert E. Hodson, 542-5868
The School of Marine Programs, established by the University in 1992, is responsible for the coordination and general management of the Department of Marine Sciences, Marine Institute, Marine Extension Service, the Georgia Sea Grant College Program, and the Environmental Ethics Certificate Program. The Department of Marine Sciences currently offers undergraduate courses in marine biological, chemical, and physical science. The Interdisciplinary Studies major in Marine Sciences is available to students maintaining a B average or better. Students have access to the extensive field and laboratory facilities of the School of Marine Programs in Athens and at Sapelo Island, Skidaway Island, and Brunswick on the Georgia coast.

The **Marine Institute**, located on Sapelo Island, was established in 1953 and serves as a research facility for resident staff and for campus-based faculty members. Research has centered mainly on basic marsh ecology to provide an understanding of energy flow, cycling of minerals and nutrients through the marshes, and factors regulating the metabolism of the salt marsh ecosystem.

The **Marine Extension Service** addresses problems related to the state's marine resources and provides an outreach program in marine environmental education to students, including K-12, college, postgraduates, and the general public. The Marine Resources Center on Skidaway Island is the major marine education facility for schools and colleges in the state. At the Brunswick Extension Station, specialists work directly with the fishing and seafood processing industries to solve problems of resource management and utilization.

The **Georgia Sea Grant College Program**, part of the National Sea Grant College Program, was established in 1971. In an approach roughly analogous to that of the Land Grant System in working with agriculture, Sea Grant promotes the wise use of marine resources through a coordinated program of research, education, and advisory services. The University of Georgia was designated as the nation's fifteenth Sea Grant College in 1980.

The **Environmental Ethics Certificate Program (EECP)** offers an interdisciplinary curriculum designed to prepare students to understand the complex nature of problems arising from human interactions with the environment. The faculty and students of the EECP come from a wide range of natural and social sciences as well as the arts, humanities, and law. For further information, contact the EECP office at 542-0935 or via e-mail at eecp@arches.uga.edu, or Peter G. Hartel, Department of Crop and Soil Sciences, 542-0898.

INSTITUTE FOR NATURAL PRODUCTS RESEARCH

Director: Dr. S. William Pelletier, 542-5800
The Institute for Natural Products Research carries out a broad range of research on naturally occurring substances of plant origin, with particular attention to plant species of Georgia and the Southeast. Projects involve research on alkaloids, terpenes, antitumor agents, phytoalexins; the development of new synthetic methods; and the application of modern spectroscopic methods to structure elucidation problems. Research involves the isolation and elucidation of chemical structures of new compounds possibly useful as drugs for the treatment of human disease. The institute serves as a training center for visiting faculty and for postdoctorate and graduate students who are working in natural products research.

NEW MEDIA INSTITUTE

Director: Scott A. Shamp, sshamp@uga.edu, 227-7237, Fax (706) 227-7236
www.nmi.uga.edu
The New Media Institute explores the commercial, critical, and creative implications of digital media technologies through teaching, research, and service. As an interdisciplinary unit, the NMI involves students, faculty, and staff from all parts of campus in its programs and activities. The Institute offers new media courses and offers the New Media Interdisciplinary Certificate to students who complete 17 hours of approved course work.

JAMES M. COX, JR. INSTITUTE FOR NEWSPAPER MANAGEMENT STUDIES

Director: Prof. Conrad C. Fink, 542-5031
The James M. Cox, Jr. Institute for Newspaper Management Studies, founded in 1990, is designed to assist undergraduate and graduate students in learning management skills, as well as journalistic techniques, necessary for efficient, profitable and socially responsible operation of newspapers in today's complex society. The institute also funds research projects with direct application to management and strategic problems confronting the newspaper industry.

Other Services and Activities

ATHLETIC ASSOCIATION

The University of Georgia conducts a broad program of intercollegiate athletics which includes 20 sports (11 women, 9 men). The University is a member of the Southeastern Conference and the National Collegiate Athletic Association, and abides strictly by the regulations and policies of these groups. The Board of Directors of the Athletic Association, composed of faculty, alumni, and student representation with the President of the University as chairman, has general control of internal policies of the University relating to all phases of intercollegiate athletics.

THE UNIVERSITY OF GEORGIA ALUMNI ASSOCIATION

Originally founded in 1834 as the Georgia Alumni Society, the National Alumni Association continues to promote the goals of keeping alumni involved and connected, furthering the interests and ideals of the institution, and encouraging continued loyalty to the University.

Benefits of membership in the Association include access to the UGA Alumni Club & Business Center in Atlanta, discounts on NAA merchandise, and invitations to alumni events and programs. In addition, members receive a subscription to *Alumni Connections*, the official newsletter of the National Alumni Association, *Georgia Magazine*, and discounts on other University publications.

The student membership program provides a connection to alumni and other students on campus. Membership dues are $15 per year and members receive discounts at local businesses, discounts on Kaplan courses, access to the UGA Alumni Club & Business Center in Atlanta, networking opportunities, invitations to alumni events, and much more!

If you would like information on how to join the University of Georgia Alumni Association, please contact us at (706)542-2251, visit our Web site at www.alumni.uga.edu/alumni, or stop by our office on campus in the Wray-Nicholson House, 298 Hull Street.

UNIVERSITY OF GEORGIA FOUNDATION

The University of Georgia Foundation was organized in 1937 under the sponsorship of the Alumni Society and its officers. The Foundation is a private, non-profit corporation under the laws of the state of Georgia and has a board of trustees, consisting of alumni and friends of the University.

The purposes of the Foundation are to strengthen its financial resources by encouraging gifts to the University, and to receive, hold, and administer such gifts in accordance with the instructions of the donors.

Information regarding the Foundation may be obtained by writing to the Senior Vice President for External Affairs, The University of Georgia, Athens, Georgia 30602.

UNIVERSITY OF GEORGIA PRESS

The University of Georgia Press was established in 1938 as the book-publishing arm of the University of Georgia. Since then it has published over 1,300 books in a variety of disciplines including general nonfiction, southern regional studies, literary nonfiction, novels, short story collections, poetry, and scholarly works. Authors published by the press are from the University of Georgia and institutions throughout the world. The press publishes approximately 80 new books per year for the benefit of both scholars and general laypersons.

For further information or a complete list of publications by the press, contact the University of Georgia Press, Athens, Georgia 30602.

UNIVERSITY OF GEORGIA RESEARCH FOUNDATION, INC.

The University of Georgia Research Foundation, Inc. was incorporated under the laws of the State of Georgia as a nonprofit corporation on November 17, 1978.

In a Memorandum of Understanding dated February 26, 1979, the Board of Regents of the University System of Georgia authorized the Research Foundation to serve as the official grantee of all contracts, grants, and gifts for the conduct of sponsored research at the University of Georgia. In turn, the Research Foundation subcontracts with the University.

The Research Foundation was also organized to assist in the transfer of technology developed through the University of Georgia's research programs or by University personnel to the benefit of the University of Georgia and the general public. It works with inventors to obtain appropriate protection for their discoveries, including patents, plant patents, copyrights, trademarks, and plant variety protection certificates. It then works with industry to license the discoveries for commercial development.

UGARF has also been organized to assist the State of Georgia in economic development. UGARF supports a number of activities through its programs that enhance the link between the research enterprise and economic outcomes, including technology transfer, technology assessment and valuation, access to capital, identifying sources of management talent, and backing new initiatives to encourage the creation of research related companies. Early state identification of research discoveries and meaningful assistance with technology development enable the commercialization process to have much better outcomes in terms of wealth creation, job creation, and substantial returns on research and development investment. Through such UGARF programs as the Commercialization Alliance Program (CAP) and the Technology Commercialization Office (TCO), a range of services may be accessed with regard to technology-based startup companies, corporate outreach for industry-sponsored research activities, business incubation programs, and facilitation with the Georgia Research Alliance.

For further information, contact the University of Georgia Research Foundation, Inc., Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411, (706) 542-4750.

The College of Agricultural and Environmental Sciences

102 Conner Hall, (706) 542-1611
FAX: (706) 542-2130
Homepage URL: *www.uga.edu/discover*
E-mail: discover@arches.uga.edu

Administrative Officers

Gale A. Buchanan, B.S., M.S., Ph.D., *Dean and Director of the College of Agricultural and Environmental Sciences*
Ivery D. Clifton, B.S., M.S., Ph.D., *Associate Dean*
David A. Knauft, B.S., Ph.D., *Associate Dean for Academic Affairs*
Josef M. Broder, B.S.A., M.S., Ph.D., *Assistant Dean for Academic Affairs*
William R. Lambert, B.S., Ph.D., *Associate Dean for Extension*
Jerry A. Cherry, B.S., Ph.D., *Associate Dean for Research*

General Information

PURPOSE

The goal of the College of Agricultural and Environmental Sciences instruction program is to educate students in the agricultural and environmental sciences to meet the needs of agriculture and environmental protection on a regional, national, and international level. Few of the graduates from the College enter farm production careers. More than half pursue careers in business, with both agricultural and non-agricultural firms. Other graduates are employed in government, environmental protection, education, management, finance, research, processing, and manufacturing. The College of Agricultural and Environmental Sciences offers 22 degree programs that prepare students for a wide variety of career opportunities.

ORGANIZATION

The College of Agricultural and Environmental Sciences is organized to administer its three missions: teaching, research, and service. The Dean and Director has overall administrative responsibility. The Associate Dean for Academic Affairs administers the teaching program, the Associate Dean for Research administers the research program of the Agricultural Experiment Stations, and the Associate Dean for Extension administers the public service program of the Cooperative Extension Service. Most of the teaching faculty also have research responsibilities in the Agricultural Experiment Stations.

FACILITIES

Administrative offices for the College are located in Conner Hall on South Campus. All courses offered by the College are taught in buildings, laboratories, and greenhouses on South Campus. Several research farms, as well as plant and animal laboratories, are an integral part of the instruction program.

The Science Library and the University Computer Center are also conveniently located on South Campus. Many courses taught in various departments of the College require use of microcomputers and terminals which access University computers. Five microcomputer and word processing laboratories are located in College of Agricultural and Environmental Sciences classroom buildings for use by students and faculty.

Academic Information

ACADEMIC ADVISING

All undergraduate students in the College of Agricultural and Environmental Sciences are assigned an academic advisor by the head of the department in which the student will major. New students meet with advisors during orientation sessions and permanent advisors are designated shortly after classes begin. Unspecified and pre-veterinary students will be assigned during new student orientation to an academic department in which they will be advised.

DEGREES OFFERED

The College of Agricultural and Environmental Sciences offers five undergraduate degrees: the Bachelor of Science in Agriculture (B.S.A.) with a specified major, the Bachelor of Science in Agricultural Engineering (B.S.A.E.), the Bachelor of Science in Biological Engineering (B.S.B.E.), the Bachelor of Science in Environmental Health (B.S.E.H.), and the Bachelor of Science in Environmental Sciences (B.S.E.S). A dual degree program in Biological Engineering and Environmental Health with a five-year course of study is also offered.

The College of Agricultural and Environmental Sciences offers graduate programs leading to the Master of Science (M.S.) degree in agricultural economics, agricultural engineering, agronomy, animal science, biological engineering, dairy science, entomology, environmental health, environmental economics, food science, horticulture, plant pathology, poultry science, and toxicology. Additional degrees offered by the college are the Master of Agricultural Economics (M.A.E.), the Master of Agricultural Extension (M.A.Ext.), the Master of Crop and Soil Sciences (M.C.S.S.), and the Master of Plant Protection and Pest Management (M.P.P.P.M.).

The Ph.D. degree is offered in agricultural economics, agronomy, biological and agricultural engineering, entomology, food science, horticulture, plant pathology, and poultry science. In addition, there are interdisciplinary programs in animal nutrition and animal science (physiology, nutrition, and genetics), plant sciences, and toxicology.

CORE CURRICULUM

For an explanation and description of the University of Georgia Core Curriculum, see page 168 of this Bulletin.

MAJORS

The majors offered by the College and the requirements for each major may be found in the Programs of Study section of this Bulletin, starting on page 170.

ENVIRONMENTAL LITERACY

Prior to graduation, all undergraduate students entering the College of Agricultural and Environmental Sciences Fall Quarter 1993 or later must take one or more courses to promote their awareness of environmental issues.

HONORS PROGRAM

The College of Agricultural and Environmental Sciences participates in programs for superior students including the Honors Program. Admission of beginning freshmen is by invitation. Full-time students who are not invited as entering freshmen but who have a cumulative average of 3.7 or better and 14 or more semester hours may request admission to the program. Students transferring from other universities or colleges with a cumulative average of 3.7 should write directly to the director of the Honors Program and request an interview. Students interested in this program should consult the section "Honors Program" in this bulletin.

PRE-LAW PROGRAM

The College of Agricultural and Environmental Sciences' Pre-law Program prepares undergraduate students for law school while they are earning degrees in existing fields of agricultural and environmental science. In this manner, students can major in relevant career-oriented scientific disciplines while perfecting learning skills that will assist them in law school or other advanced degree programs. By identifying skills and courses, students can design their studies to best prepare themselves for careers in law.

The CAES Pre-law Program provides guidance to students on when to take the Law School Admissions Test and reviews the services of the Law School Data Assembly Service. Students who are interested in attending law school or would like more information may contact Dr. Terry Centner, Agricultural and Applied Economics, 313D Conner Hall, 706-542-0756, *undergraduate@agecon.uga.edu.*

PRE-MEDICINE PROGRAM

The College of Agricultural and Environmental Sciences' Pre-Medicine Program helps students of all academic majors explore the possibility of attending medical or dental school, move through the application process, and prepare for medical school and the medical profession. Students in the College of Agricultural and Environmental Sciences who are interested in attending medical school should contact: Dr. Karl Espelie, Entomology Department, 425B Biological Sciences Building, 706-542-2278, espelie@arches.uga.edu.

ACADEMIC COUNSELING

The College of Agricultural and Environmental Sciences is deeply interested in the success of every student. At times, personal difficulties may affect academic performance. Support to overcome these difficulties and achieve academic success is available through the Academic Counseling Program. The program is designed to help students with problems that may be affecting the attainment of their academic goals, determine the source(s) of academic difficulties, and identify available resources. For more information about the Academic Counseling Program, contact: Julio Rojas, Academic Counselor, 317 Poultry Science Building, 706-583-0499, jrojas@coe.uga.edu.

SCHOLARSHIPS

In addition to the financial assistance available to all University students, the College of Agricultural and Environmental Sciences provides scholarships, work-study programs and loans to students majoring in the agricultural sciences. For example, opportunity for part-time employment is often available in the College of Agricultural and Environmental Sciences through different academic departments. In addition, there are numerous agricultural scholarships awarded annually in national competitions. Students may apply for these awards through their academic advisors and department heads.

College of Agricultural and Environmental Sciences scholarships are divided into two categories; college-wide scholarships and departmental scholarships. The college-wide scholarships are open to any student in the College of Agricultural and Environmental Sciences. Recipients of the college-wide scholarships are selected by the College of Agricultural and Environmental Sciences Scholarship Committee. Departmental scholarships are available to students enrolled in a specific department. Recipients of the departmental scholarships are selected by a committee within the departments.

To qualify for College of Agricultural and Environmental Sciences scholarships (both college-wide and departmental), a student must be officially enrolled or officially accepted for enrollment in the College of Agricultural and Environmental Sciences. Information and applications on all College of Agricultural and Environmental Sciences scholarships can be obtained by writing: Associate Dean for Academic Affairs, College of Agricultural and Environmental Sciences, 102 Conner Hall, University of Georgia, Athens, GA 30602-7502, or by visiting our Web site.

Courses of Instruction

See page 305. Courses for the College of Agricultural and Environmental Sciences are listed under the following prefixes:

AAEC	Agricultural and Applied Economics
ADSC	Animal and Dairy Science
AESC	Agricultural and Environmental Sciences
AGCM	Agricultural Communications
ALDR	Agricultural Leadership
CRSS	Crop and Soil Sciences
EHSC	Environmental Health Science
ENGR	Engineering
ENTO	Entomology
ETEC	Engineering Technology
FDST	Food Science and Technology
HORT	Horticulture
PATH	Plant Pathology
PGEN	Plant Genetics
POUL	Poultry Science

The Franklin College of Arts and Sciences

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Michelle Garfield, *Acting Assistant Dean*
Anna Eidsvik, *Coordinator of Academic Advising*
R. Alan Langford, M.D., *Coordinator, Premedical Studies Program*

General Information

PURPOSE

The objectives of the faculty of the Franklin College are to advance and disseminate knowledge in the basic academic disciplines of the Arts and Sciences. The college offers its undergraduates both the fundamentals of a liberal education on which to base a lifetime of learning and the opportunity to concentrate in studies which form the foundation for professional pursuits. In concert with the Graduate School, the Franklin College offers graduate students opportunities for advanced study and research. The faculty strives to enrich the intellect and nurture the resourcefulness of the individual student so that he or she may deal with life's challenges with well-founded self-confidence and self-assurance. The objectives of the Franklin College are pursued by a faculty committed to high achievement in teaching and research and creative activities and confident in the quality and the vitality of our educational program.

ORGANIZATION

The Franklin College is organized into several divisions.

The Division of General Studies

All freshmen entering the College, and all transfer students who have not earned enough credit to be classified as juniors, are enrolled in this division. While in the Division of General Studies, students take courses in the required University of Georgia Core Curriculum and also work toward satisfying the Franklin College degree requirements, identified below. While in this Division, students who entered the University undecided about their majors must choose majors for which they are eligible.

Upon the satisfactory completion of the requirements of this division, which is usually accomplished during the first two years, students transfer either to one of the several departments of the College or to another school or college within the University. Each department in the Franklin College, and each school or college in the University, has its own regulations concerning transfer. Students should contact the appropriate dean's office well in advance of the expected date of transfer.

The Major Divisions

The major divisions in the Franklin College are:

Division of Biological Sciences: The Departments of Biochemistry and Molecular Biology, Botany, Cellular Biology, Genetics, Marine Sciences, Microbiology, and Psychology.

Division of Fine Arts: The Department of Drama, and the Schools of Art and Music.

Division of Humanities: The Departments of Classics, Comparative Literature, English, Germanic and Slavic Languages, Romance Languages, Speech Communication, History, Philosophy, and Religion.

Division of Social Sciences: The Departments of Anthropology, Geography, History, Philosophy, Political Science, Psychology, Sociology, and Speech Communication.

Division of Physical Sciences: The Departments of Chemistry, Computer Science, Geography, Geology, Marine Sciences, Mathematics, Physics and Astronomy, Statistics, and the Institute of Ecology.

Division of Interdisciplinary Studies: The African American Studies Program, French Studies Program, German Studies Program, Global Policy Studies Program, Latin American and Caribbean Studies Program, Linguistics Program, Medieval Studies Program, Women's Studies Program, Criminal Justice Studies Program, and Interdisciplinary Studies Major Program.

Minimum requirements for entry to a major division are at least 60 semester hours of college credit and a cumulative grade point average of 2.0. Some majors have additional (more stringent) requirements. Once admitted to a major division in the College, a student may transfer to any other division and/or degree program in the Franklin College by satisfying the requirements of that program, and completing the Change of Major form in the Dean's Office.

Academic Information

ADVANCED PLACEMENT

Through Advanced Placement, a student may exempt a course with or without credit. Exemption of a course with credit is equivalent to completing the course. This credit counts toward the 120 semester hours required for graduation and may be used to satisfy core curriculum requirements. If a course is exempted without credit, a core curriculum requirement may be met. If so, the student has the opportunity to choose an equivalent number of credit hours in electives in order to meet overall graduation requirements. For further information concerning Advanced Placement, inquire at the Honors Office in the Holmes/Hunter Academic Building.

APPLICATION FOR GRADUATION

The Registrar's Office produces graduation checksheets for currently enrolled students who have completed 80 semester hours toward their degrees. Each student is responsible for contacting the Graduation Certification Office (542-1522) to complete degree certification. Failure to do so may result in postponement of graduation.

ACADEMIC ADVISING

Academic advising is mandatory in the Franklin College of Arts and Sciences and is provided by a combination of professional advisors and faculty members. During the freshman and sophomore years, most students will be advised in New College by professional advisors. These students may make appointments to see their advisors in person in the Office of Academic Advising, Room 106 New College or online at *http://appoint.franklin.uga.edu/default.htm*. At the appropriate time, students are transferred by the professional advisors to their major departments where they are assigned faculty mentors and may also consult with professional staff about issues of class scheduling.

Exceptions to this policy include Honors students, who are advised by members of the Honors Program office; Franklin College students who live in specified residence halls, who are advised in the residence halls by professional advisors; and art and pre-pharmacy majors, who are advised in their respective schools. These students should contact the respective offices to schedule advising appointments.

All students in the Franklin College of Arts and Sciences who have any academic questions or concerns for which they are unable to find answers elsewhere are encouraged to go to 106 New College where they may see an advisor "on-call," 9 a.m.-5 p.m., Monday-Friday, without an appointment.

HONORS PROGRAM

Appropriate Honors courses may substitute for corresponding courses in the curriculum of the College of Arts and Sciences. Contact the Honors Program Office for information.

Degrees and Programs Offered

The Franklin College offers several baccalaureate degrees and participates in several combined degree programs. Each of these degrees requires a liberal education in the division of general studies and a major in one of the major divisions. In addition, several certificate programs allow students to combine a major in one discipline with interdisciplinary work in others.

The following degrees are offered by the College of Arts and Sciences:

Bachelor of Arts, in which the major may be in the division of Language and Literature, Fine Arts, Social Sciences, in geology, in economics, in statistics, in mathematics, in the Honors Interdisciplinary Studies Program, or the Interdisciplinary Studies Major of the Division of Interdisciplinary Studies.

Bachelor of Science, in which the major must be in the Divisions of Biological or Physical Sciences, in psychology, in the Honors Interdisciplinary Studies Program, or the Interdisciplinary Studies Major of the Division of Interdisciplinary Studies.

Bachelor of Science in Chemistry, in which the major must be Chemistry.

Bachelor of Fine Arts, in which the major must be in the Division of Fine Arts or the Interdisciplinary Major of the Division of Interdisciplinary Studies.

Bachelor of Music, in which the major must be in Music.

Joint Degree Programs. For students of superior scholastic standing, the Franklin College offers programs leading to a baccalaureate degree from the College combined with a professional degree or program from another school or college. They are:

Bachelor of Science, offered with the Medical College of Georgia.

Bachelor of Science, offered with the College of Veterinary Medicine at the University.

Combined Bachelor-Master Degree, offered with the Graduate School at the University.

Also, there are several programs which may be combined with majors in other areas: Institute for African American Studies, French Studies Program, German Studies Program, Global Policy Studies Program, Latin American and Caribbean Studies Program, Medieval Studies Program, Women's Studies Program, the Pre-Theology program and the A.B. or B.S. with provision for a teaching certificate. Each of these degrees and programs is described in the Programs of Study section of this Bulletin.

Double Major. A double major is two separate majors in the same degree. A double major is earned when the requirements for a major in each of the two areas are satisfied and the requirements for the degree are satisfied. It is sometimes possible to count the same course twice, once in each major, in satisfying the major requirements. When two separate degrees are earned, this is called a *dual degree*. See the Academic Information section of this Bulletin for regulations.

Minor: Many departments and programs offer the chance to earn a minor by taking 15-18 semester hours of approved courses. Contact the individual department or program for information.

CORE CURRICULUM

For a description and explanation of the University of Georgia Core Curriculum, see page 168 of this Bulletin.

DEGREE REQUIREMENTS

Requirements for the degrees and majors offered by the Franklin College may be found in the Programs of Study section of this Bulletin, starting on page 170.

UNIVERSITY OF GEORGIA GRADUATION REQUIREMENTS

For a description and explanation of University-wide requirements for graduation, see Degree Requirements in the Academic Information section of this Bulletin.

ADDITIONAL REQUIREMENTS FOR DEGREES IN THE FRANKLIN COLLEGE

Note: Specific approved courses in each area may be found on the Web at: http://ben.franklin.uga.edu/saga/data/frankln.htm.

1. All degree recipients must have satisfactorily completed one course certified by the College as dealing with multicultural subject matter.
2. All A.B. and B.S. degree recipients must demonstrate competency in a foreign language equivalent to completion of the third semester of study at the University of Georgia. This requirement may be met by satisfactory scores on a language placement test (including AP, SAT II, UGA placement tests, or the TOEFL if English is not the student's native language) or satisfactory completion of a third semester course at an accredited college or university. American Sign Language courses may be used to satisfy this requirement. *Some majors may required competency above this minimum.*
3. All A.B. and B.S. degree recipients must have satisfactorily completed a minimum of one college course in literature; one college course in history; two college courses in social science (not including history); and two college courses dealing with the disciplines of fine and performing arts, philosophy, or religion.
4. All A.B. and B.S. degree recipients must have satisfactorily completed one course in the physical sciences and one course in the biological sciences.

WAIVER OF DEGREE REQUIREMENTS

Course substitutions or waiver of requirements may be made only upon written approval of the Dean or the Senate Committee on Academic Standards of the College of Arts and Sciences. In some cases, specific courses listed in the degree requirements may be replaced by higher level courses. Consult with an advisor for particulars.

Other Degree Programs

BACHELOR OF ARTS OR BACHELOR OF SCIENCE (With Provisions for a Professional Secondary School Teaching Certificate)

Either degree requires that some courses be taken in both the College of Education and the Franklin College of Arts and Sciences. Students interested in meeting teacher certification requirements should inquire at both the Student Services Center, College of Education, and in the Franklin College of Arts and Sciences to determine their appropriate advisors. Each student's program must then have the approval of both advisors and the dean's office of each college.

COMBINED BACHELOR/MASTER DEGREE

Certain exceptional students entering the University each year with unusual academic achievements may have potential to plan a curriculum leading directly to a master's degree during the four-year period normally used to complete the baccalaureate. This combined bachelor/master degree objective is perhaps the greatest academic challenge offered by the University.

A student interested in this degree objective submits credentials for evaluation to the Honors Program. Candidates should have obtained at least 15 semester credits (English, foreign languages, mathematics, history, political science, biology, chemistry, and others) through the Advanced Placement Program. Each candidate should:

- be ready to begin sophomore studies during the first year here;
- have balanced Scholastic Aptitude Test (SAT) scores totaling 1300 or above;
- come with a general inclination for a major;
- exhibit motivation;
- provide supporting credentials that indicate other superior academic achievements.

Courses of Instruction

Courses for the College of Arts and Sciences are listed under the following prefixes:

AFAM	African American Studies
AFST	African Studies
ANTH	Anthropology
ARAB	Arabic
ARED	Art Education
ARGD	Graphic Design
ARHI	Art History
ARID	Interior Design
ARST	Studio Art
ARTI	Artificial Intelligence
ASTR	Astronomy
ARTS	Art
BCMB	Biochemistry and Molecular Biology
BIOL	Biology
BTNY	Botany
CBIO	Cellular Biology
CHEM	Chemistry
CHNS	Chinese
CLAS	Classical Culture
CMLT	Comparative Literature
CSCI	Computer Science
DRAM	Drama
ECOL	Ecology
EETH	Environmental Ethics
ENGL	English
FREN	French
FRES	Freshman Seminars
GENE	Genetics
GEOG	Geography
GEOL	Geology
GREK	Greek
GRMN	German
HEBR	Hebrew
HIST	History
HNDI	Hindi
HONS	Honors
INTS	Interdisciplinary Studies
ITAL	Italian
JPNS	Japanese
KREN	Korean
LATN	Latin
LING	Linguistics
MARS	Marine Sciences
MATH	Mathematics
MIBO	Microbiology
MUSI	Music
PHIL	Philosophy
PHYS	Physics
POLS	Political Science
PORT	Portuguese
PSYC	Psychology
RELI	Religion
ROML	Romance Languages
RUSS	Russian
RUST	Russian Translation
SOCI	Sociology
SOSI	Social Science
SPAN	Spanish
SPCM	Speech Communication
STAT	Statistics

SWAH	Swahili
SWED	Swedish
WMST	Women's Studies
YORB	Yoruba
ZULU	Zulu

The C. Herman and Mary Virginia Terry College of Business & THE J.M. TULL SCHOOL OF ACCOUNTING

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Martha Reynolds, B.S.E., M.B.E., *Director of the Undergraduate Program*
George Marable, B.B.A., *Business Manager*

General Information

PURPOSE

The Terry College of Business intends not only to teach undergraduate and graduate students, but also to conduct a broad program of basic and applied research and to render extensive service to society. The particular task is one of educating persons for the practice of business administration.

ACCREDITATION

The Terry College is a member of AACSB, the International Association for Management Education, the recognized national accrediting association for collegiate schools of business.

FACILITIES

The administrative offices are located in the five-story R. Preston Brooks Hall on the north campus. The majority of business courses are taught in Caldwell Hall, a seven-story classroom building adjacent to Brooks Hall. Sanford Hall, a state-of-the-art facility opened in 1997, provides additional classrooms, a student center, and the office of the Undergraduate Program. Detailed information about the Terry College, undergraduate and graduate programs, faculty, departments, and research centers can be accessed at *www.terry.uga.edu.*

Undergraduate Program

ACADEMIC ADVISING

Academic advisement in the Terry College is coordinated by the Director of the Undergraduate Program. Each major department has a coordinator who is responsible for upper division academic advising.

HONORS PROGRAM

Admission of students to the University of Georgia Honors Program is by invitation only. Beginning freshmen are admitted on the basis of high school grades and scores on the College Entrance Examination Board Scholastic Aptitude Tests, and on the basis of placement and qualifying examinations administered by the University. For all other students, grades made at the University determine admission to the program.

DEGREES OFFERED

The Terry College offers the undergraduate degree, Bachelor of Business Administration. The School of Accounting offers a five-year course of study leading to a B.B.A./M.Acc. degree.

Several graduate degree programs in business are described in the *Graduate School Bulletin*, including the Master of Business Administration, Master of Accountancy, Master of Marketing Research, and the Master of Arts and Doctor of Philosophy degrees in business-related fields. Also offered are joint degree programs in Master of Business Administration-Law and Master of Accountancy-Law. Information on any of these graduate degree programs may be obtained by writing the Director of Graduate Programs within the Terry College. Visit our home page on the Web at *www.terry.uga.edu.*

ENTRANCE REQUIREMENTS

Entrance requirements for incoming freshmen, transfer students, and students declaring majors within the University of Georgia may be higher in selected BBA majors. Entrance requirements for each major may be found in the Programs of Study section of this Bulletin. Please check with the UGA Office of Admissions (www.uga.edu/admit/) if you are an incoming freshman, or with the Terry College, Office of Undergraduate Programs (*www.terry.uga.edu*), if you are a transfer student.

MAJORS

Major fields of study include: accounting, economics, finance, international business, management, management information systems, marketing, real estate, and risk management and insurance. See the Programs of Study section of this Bulletin for requirements for these majors.

INTERNSHIPS

Junior and senior students may choose to gain experience by serving internships. Within departmental guidelines, students may receive academic credit for internships.

STUDY ABROAD

Students considering a Study Abroad Program should check with their academic advisor for information about specific courses and programs. Students should work through the UGA Study Abroad Program to insure that academic credit is transferrable and applicable to the BBA degree. Several Study Abroad and Exchange Programs are coordinated through the International Business Program in the Terry College.

Bachelor of Business Administration Degree Requirements

All students should acquaint themselves with degree requirements applicable to all students of the University as set forth in the general Academic Information section of this bulletin.

In order to qualify for a Bachelor of Business Administration degree, a student must meet the entrance requirements which may vary from other schools and colleges within the University, be enrolled in one of the major disciplines, and meet all of the degree requirements as set forth by the Terry College.

RESIDENCY

In addition to the UGA residence policy, the Terry College has the following residency requirement: BBA students must complete at least 30 semester hours as a student in the Terry College. Students are also expected to complete major courses in residence. However in some cases with departmental permission, a student may receive transfer credit for one major course.

GRADES

Grades or GPAs of 2.0 in the following areas are required for BBA degree certification:

1) ENGL 1101 and 1102 combined. Students will not receive credit for courses numbered 3000 and above until they have satisfactorily completed ENGL 1101 and 1102.
2) All major courses;
3) Business cumulative GPA; and
4) UGA cumulative GPA.

TRANSFER STUDENTS

Admission standards for transfer students to a major in the Terry College of Business may vary from those standards set by other schools and colleges within the University. Acceptance to the Terry College is contingent upon the student's currently submitted transcript and transfer GPA.

The specific credit for work done at other institutions which will apply toward the Bachelor of Business Administration degree is determined by UGA Admissions Transfer Credit Evaluators. Establishing a transfer transcript does not necessarily mean that all transfer credit will be accepted toward a Bachelor of Business Administration degree.

Transfer students attend transfer orientation sessions. During orientation, students review their progress toward the B.B.A. degree with a Terry College academic advisor. Advisors help students with course selection prior to registration.

Regulations governing transfer students are given in the Academic Information section of this Bulletin.

ACADEMIC HOURS REQUIRED FOR THE BBA DEGREE

60 hours: University System Core Curriculum, Areas A - F
24 hours: General electives (as specified in the BBA Check sheet)
12 hours: Upper division business core (3000-series courses)
3 hours: Upper division business selection (4000-series courses)
21 hours: Major required courses
120 hours, plus one hour of Physical Education.

TERRY COLLEGE OF BUSINESS COLLEGE-WIDE DEGREE REQUIREMENTS

All majors must complete the following courses in order to qualify for a Bachelor of Business Administration degree: ACCT 2101, 2102; ECON 2100 or 2200; ECON 2105, 2106; FINA 3000; LEGL 2700; MARK 3000; MATH 2200, 2200L; MIST 2090; MGMT 3000; MSIT 3000; SPCM 1100 or 1500 or 2300.

UNIVERSITY OF GEORGIA DEGREE REQUIREMENTS

For a description and explanation of University-wide requirements for graduation, see Degree Requirements under Academic Information in this Bulletin.

CORE CURRICULUM

See page 168 of this Bulletin for a detailed explanation and description of the Core Curriculum. Preferred courses for Areas A-F are indicated under the specific BBA majors in the Programs of Study section of this Bulletin.

MAJOR AND ADDITIONAL BBA REQUIREMENTS

Course descriptions and prerequisites are listed under Courses of Instruction, starting on page 305. This information is also found in the on-line UGA Bulletin: *www.bulletin.uga.edu.*

General Electives (eight courses—24 hours)
15 hours in Arts and Sciences
1 business course outside major (upper division)
2 business courses outside department (upper division)

Upper Division Business Courses
Upper division/major courses are restricted to Terry students or permission of College.

Upper Division Business Core (four courses—12 hours)
All business students take the following four courses:
MGMT 3000 Management of Organizations and Individuals
MSIT 3000 Statistical Analysis for Business
FINA 3000 Financial Management
MARK 3000 Principles of Marketing

Upper Division Business Selection (one course—3 hours)
ACCT 4000 Accounting Information in a Multinational Setting
FINA 4000 Money and Capital Markets
ECON 4000 The Economics of Human Resources
MARK 4000 Marketing Research for Business Decision
MGMT 4000 Integrated Resource Management
REAL 4000 Real Estate
RMIN 4000 Risk Management and Insurance

Major Required Courses (7 courses—21 hours)
Each student will take seven designated 3-hour courses in a given major.

Courses of Instruction

See page 305. Courses for the Terry College of Business are listed under the following prefixes:

ACCT	Accounting
BUSN	Business
ECON	Economics
FINA	Banking and Finance
ILAD	Institute for Leadership Advancement
INTB	International Business
LEGL	Legal Studies
MARK	Marketing
MIST	Management Information Systems
MSIT	Management Sciences and Information Technology
MGMT	Management
REAL	Real Estate
RMIN	Risk Management and Insurance

The College of Education

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General Information

PURPOSE

The College of Education is the division of the University of Georgia that provides and administers all professional programs and courses designed for the preparation of teachers and other professionals in health and leisure science positions. In addition, the College encourages learning through the acquisition of knowledge, skills, attitudes, and values necessary for continued human development and lifelong learning. In its role of educational leadership, the College: a) recruits and selects prospective educational and health-related professionals, b) provides pre-service and in-service training programs, c) conducts research to solve educational and health and leisure problems, and d) offers field service to all types and levels of educational institutions as well as social, health, and business agencies and organizations.

ORGANIZATION OF UNDERGRADUATE PROGRAMS

Undergraduate programs in the College of Education prepare students to teach in the following fields:

Early Childhood (preschool, kindergarten, grades 1-5)
Middle School (grades 4-8)
Secondary (grades 7-12) in agricultural education, business education, health occupations education, family and consumer sciences education, marketing education, technology education, trade

and industrial education, and the areas of English, mathematics, science, and social science.

Grades P-12 in art, dance, foreign language education, health promotion and education, music, health and physical education, and special education.

Programs leading to certification as a counselor, school administrator, etc., are all graduate or postbaccalaureate programs.

The College administers all programs in professional education. The entire resources of the University are used in the education of teachers. Some programs such as agriculture education, art education, family and consumer sciences education, and music education are primarily housed outside the College of Education and many courses in other teacher education programs are taught by other divisions of the University.

Although specific course requirements vary with the teaching field, each undergraduate program includes the following elements:

(1)general education, a sequence of courses from a variety of fields, taken primarily in the College of Arts and Sciences in the freshman and sophomore years;

(2)the teaching field or major, consisting of courses designed for the specific subject or grade level of prospective teaching, offered in the College of Agricultural and Environmental Sciences, Franklin College of Arts and Sciences, Terry College of Business Administration, College of Education, and College of Family and Consumer Sciences;

(3)work in professional education in the College of Education.

Non-teaching majors are also offered in communication sciences and disorders, dance, exercise and sport science, health promotion and education, recreation and leisure studies, and sport studies.

FACILITIES

The College of Education utilizes extensively the facilities of the University, the community, and the schools in the area. Administrative offices are located in Aderhold Hall. In addition, the following buildings are primarily used for College of Education programs: Dance Building, River's Crossing, and Ramsey Student Center.

ACCREDITATION

The University is accredited by the Georgia Professional Standards Commission, the Southern Association of Colleges and Schools, and the National Council for the Accreditation of Teacher Education. Specific programs are also accredited by the American Speech-Language-Hearing Association, National Recreation and Parks Association in cooperation with the American Association for Leisure Recreation, the American Psychological Association, and the Commission on Accreditation of Allied Health Education Programs.

ACADEMIC ADVISING

The Student Services office of the College provides advisement for all freshmen and sophomore students, and for those students who have not yet made a decision about a major. Transfer students are also advised in the Student Services office until they are admitted to a major. After admission to a major, students are assigned an advisor in that program. However, students should consult an advisor in their proposed area of study as early as possible. Students must confer with their advisor at least once per semester to be advised and cleared for registration.

Students who need initial advisement should contact the Student Services office in Aderhold Hall or call (706) 542-1717.

Special Programs

HONORS PROGRAM

Students in the College of Education are encouraged to participate in the Honors Program. Admission of beginning students is by invitation. Students who have earned at least 14 hours of graded academic credit and have a cumulative grade point average of 3.7 may apply for admission to the program. The College of Education offers individual study and Honors thesis courses and an Honors section of Learning and Motivation (EPSY 2020H), Child and Adolescent Development (EPSY 3010H), and Teaching with Technology (EDIT 2020H). See the Honors Programs section of this Bulletin for more information about this program.

EDUCATIONAL FIELD EXPERIENCES (Student Teaching and Practicums)

Supervised observation-participation in cooperating schools is required of most candidates for a degree leading to professional certification. The extent of required participation in pre-student teaching laboratory experiences varies extensively among different teacher preparation programs. A minimum of one full semester of student teaching is required of all teaching candidates.

Placement in student teaching requires admission to Teacher Education and other prerequisites as outlined under the Admission to Teacher Education section. Student teaching activities are directed by college supervisors and selected cooperating supervising teachers. High school student teachers usually teach in one teaching field, middle grades in one or two teaching fields, and early childhood at a kindergarten or primary level.

Student teaching involves full-time placement in a school setting. It normally carries 12 hours of credit; no additional course work is permitted during student teaching. Students should anticipate that additional expenses will be incurred during student teaching as placement may require transportation and off-campus living arrangements.

Students in some programs participate in a school practicum prior to student teaching. Students should see their departmental advisors concerning this requirement.

Practicums are required for non-teacher education programs which include exercise and sport science, health promotion and education, recreation and leisure studies, and dance education.

To receive a student teaching assignment a student must:

- make application at the Educational Field Experience Office in Aderhold Hall by the end of the first week of the semester preceding student teaching;
- be admitted to Teacher Education; have at least a 2.5 overall grade point average;
- have completed essentially all required courses in the teaching field with a grade of at least C in each;
- have completed the prerequisite education courses with a grade of at least C in each (courses in curriculum and teaching procedures must have been taken on this campus);
- have successfully completed the school practicum (required in most programs);
- be in satisfactory personal health to assume responsibility in student teaching;
- be recommended by his/her department; and
- have clearance from a criminal background check.

A student is not permitted to student teach while on probation.

Some program areas have requirements exceeding the above; such requirements must be met to enter the program and for continued matriculation, including student teaching.

Clinics and Laboratories

READING CLINIC

The Reading Clinic provides assessment and instruction of school-aged children with reading difficulties. These services are provided both as a service to the state of Georgia and to provide useful experiences for our graduate students. The Clinic provides direct tutoring for children with reading problems. This tutoring is done individually or in small groups and is based on an analysis of the child's needs in reading. The Clinic also will evaluate children for the purpose of making suggestions for more effective reading instruction. These evaluations are followed up with a conference with school personnel to implement these suggestions. Arrangements for these services should be made through the Director of the Clinic at (706)542-7866.

SPEECH AND HEARING CLINIC

The Communication Sciences and Disorders area is concerned with training of speech/ language pathologists, audiologists, and teachers of the hearing impaired, and the conducting of research in speech, language, and hearing disorders. The Speech and Hearing Clinic extends its diagnostic and treatment services to all children and adults who have functional or organic problems of oral communication. Particular attention is given to assisting University students. Arrangements for these services can be made by contacting the Clinic office at (706) 542-4598.

CENTER FOR COUNSELING AND PERSONAL EVALUATION

The Center for Counseling and Personal Evaluation, located in the College of Education, provides professional services for a wide range of emotional, interpersonal, and educational concerns. Services are available to adults, adolescents, and children and include psychological evaluations, individual counseling, family and couples counseling, group counseling, and career counseling. The program is coordinated and implemented by faculty and advanced graduate students in the Department of Counseling and Human Development Services and is available to individuals and families throughout Northeast Georgia. Counseling sessions are based on a sliding fee scale according to income. Psychological assessment fees vary according to the type of assessment. Center hours are Monday-Thursday 8:00 to 8:00 and Friday 8:00 to 5:00. The Center is located at 424 Aderhold Hall. Referrals and requests for services are accepted by phone at (706) 542-8508 or in person.

Academic Information

DEGREES OFFERED

The College of Education prepares its students for the undergraduate degree of Bachelor of Science in Education (B.S.Ed.). By coordinating programs with other appropriate colleges and schools, the College also prepares students for educational specialties within the undergraduate degrees of Bachelor of Science in Agriculture, Bachelor of Fine Arts, Bachelor of Science in Family and Consumer Sciences, and Bachelor of Music.

Through the Graduate School of the University, the following degrees are offered: Master of Art Education, Master of Education, Master of Arts in Education, Master of Music Education, Educational Specialist, Doctor of Education, and Doctor of Philosophy. See the *Graduate School Bulletin* for further information.

MATRICULATION

Most students who prepare for teaching matriculate in the College of Education and pursue one of the programs leading to the degree of Bachelor of Science in Education. Students matriculate in other colleges for specialized degrees with educational applications.

Students enrolled in other colleges of the University who seek certification as teachers should apply for admission to Teacher Education, have their individual programs approved by the College of Education by the beginning of the junior year, and must meet all requirements of the approved professional programs.

A distinction is made between matriculation in a division of the University or the College of Education offering teacher education programs and formal admission to a program in teacher education, as described in "Admission to the College and to Teacher Education."

ADMISSION TO THE COLLEGE AND TO TEACHER EDUCATION

Standards for admission of freshmen to the College of Education are the same as for those admitted to the University. Admission standards for transfer students to the College of Education may vary from those standards set by other schools and colleges within the University and may also vary according to the number of hours earned.

Enrollment in the College of Education

does not constitute admission as a candidate for a degree in teacher education or professional certification in other professional fields. Each student who seeks a professional teaching degree or professional teacher certification must apply for admission to Teacher Education through the College's Educational Field Experience Office in Aderhold Hall.

For admission of transfer students to the College of Education, the following grade point averages (GPAs) will apply: All external transfer students must meet minimum UGA transfer admission requirements for acceptance to the College. All internal transfer students (transfers from within the University) must meet the following minimum GPA requirements: for up to 30 semester hours, 2.0; from 31 to 60 semester hours, 2.1; from 61 to 90 semester hours, 2.2; and for 91 or more semester hours, a 2.3 GPA.

Many of the majors in the College of Education require higher GPAs than these minimum requirements listed. Students should check with individual departments to determine the actual requirements for entry into their program.

Admission to Teacher Education must be obtained prior to enrollment in professional teacher education courses. Requirements for admission to undergraduate Teacher Education include: completion of at least one semester of academic work at the University of Georgia; 2.5 overall grade point average (some program areas require a higher GPA); satisfactory completion of English 1101 and 1102; satisfactory completion of EFND 2030 or the equivalent course taken at another institution; passing of the Regents' Test; demonstration of oral language competency; and departmental recommendation. In addition, please note the B.S.Ed. degree requirements below.

Language proficiency and the 2.5 GPA (or higher program requirements) must be maintained throughout the programs. If a student already holds a degree, admission to teacher education is based on the *overall* GPA.

CERTIFICATION

Initial teacher certification in Georgia may be obtained only by following an approved teacher education program. Requirements for meeting an approved teacher education program vary depending on area of certification. For specific course requirements relative to an area of interest, students should contact the appropriate department. The department will determine the requirements for entry into the program, the course work required to meet the approved teacher education program, and the procedures for obtaining a professional recommendation.

The Georgia Professional Standards Commission provides evaluations only to determine or establish one's eligibility for a provisional certificate, to determine requirements needed to add a field, and to determine renewal requirements for previously held Georgia certificates. The Commission will not outline specific professional education course work requirements to establish the initial professional certificate (except for the level one and two Vocational Education certificate fields).

In addition to completing prescribed academic work, individuals applying for initial teacher certification must present passing scores on Praxis I academic skills test in reading, mathematics, and writing. Individuals are exempt from this requirement if they have earned qualifying scores on any of these tests: SAT score of at least 480V and 520M; GRE score of at least 490V and 540Q; or ACT score of at least 21V and 22M. An applicant must also earn satisfactory scores on the Praxis II (Subject Assessments) in the appropriate subject areas before an application can be submitted. Applications for certification and Praxis I and II registration packets and study guides are available from the Student Services Office in Aderhold Hall.

Bachelor of Science in Education Degree Requirements

Students are required to acquaint themselves with general degree requirements applicable to all students of the University as stated in the Academic Information section of this Bulletin.

Undergraduate teacher education programs are approved by the Georgia Professional Standards Commission and the National Council for the Accreditation of Teacher Education. A person completing any one of these programs may be recommended for certification in Georgia as well as in most other states.

The programs outlined in the Programs of Study section of this Bulletin lead to a Bachelor of Science in Education degree except in agriculture education, art education, family and consumer sciences education, and music education. For these fields, students who wish to complete a certification program must meet the professional education requirements cited under "Admission to the College and to Teacher Education" and complete required professional teacher education courses. They must also meet the degree requirements for these majors.

The B.S.Ed. programs typically include 120 semester hours, plus one hour of Basic Physical Education.

CORE CURRICULUM

For general information on the University of Georgia Core Curriculum, see page 168 of this Bulletin.

HOURS AND RESIDENCY

A minimum of 120 semester hours plus one hour of Basic Physical Education is required for a Bachelor of Science in Education degree. A minimum of 40 of the last 60 semester hours must be taken in residence at the University.

GRADES

A candidate for the Bachelor of Science in Education degree or other baccalaureate degree leading to teacher certification must obtain a grade of C or higher in the prescribed education field courses.

CANDIDACY FOR A DEGREE

When a student has earned at least 90 semester hours, a graduation checksheet will automatically be generated by the Office of the Registrar for processing. For graduation information, contact the Student Services Office in Aderhold Hall.

Courses of Instruction

Courses for the College of Education are listed under the following prefixes:

ARED	Art Education
CMSD	Communication Sciences and Disorders
DANC	Dance Education
EADU	Adult Education
EAGR	Agricultural Education
EBUS	Business Education
ECHD	Counseling and Human Development Services
EDEC	Early Childhood Education
EDEL	Elementary Education
EDIT	Instructional Technology
EDMS	Middle School Education
EDUC	Education
EDUL	Educational Leadership
EFCS	Family and Consumer Sciences Education
EFND	Foundations of Education
ELAN	Language Education
EMAT	Mathematics Education
EMKT	Marketing Education
EMUS	Music Education
EOCS	Occupational Studies
EPSY	Educational Psychology
ERSH	Educational Research and Measurement
ESCI	Science Education
ESOC	Social Science Education
ETES	Technological Studies
EXRS	Exercise Science
HPRB	Health Promotion and Behavior
PEDB	Physical Education Basic
PEDS	Physical Education and Sport Studies
READ	Reading Education
RLST	Recreation and Leisure Studies
SPED	Special Education

The College of Environment and Design

Caldwell Hall, (706) 542-1816
FAX: (706) 542-4485
Homepage URL: *www.sed.uga.edu*
Email:www@sed.uga.edu

Administrative Officer

John F. Crowley, B.A., M.A., Ph.D., *Dean*

General Information

The College of Environment and Design will enlarge UGA's strengths in basic and applied research and teaching relative to the environment. The College will also enhance ecological and environmental programs and opportunities at UGA. The goals of the College include becoming a leading center for creative and responsible research in understanding, planning, design, and management of natural and cultural environments and their interactions; synthesizing information about environments; and providing an atmosphere and location for collaborative cross-disciplinary studies.

ORGANIZATION

The principal units of the College include the School of Environmental Design, the Institute of Ecology, and the Academy of the Environment and Design. The following degrees are administered by the School of Environmental Design: Master of Landscape Architecture, Master of Historic Preservation, and Bachelor of Landscape Architecture. The Institute of Ecology administers the following degrees: Doctor of Philosophy with a major in Ecology, Master of Science with a major in Ecology, Master of Science with a major in Conservation Ecology and Sustainable Development, and Bachelor of Science with a major in Ecology. A graduate certificate in Conservation Ecology and Sustainable Development is also available.

INTERNSHIPS

Selected students are permitted to enroll in local and studies abroad programs, and may receive credit towards their degree. See your advisor for details.

The School of Environmental Design

The School of Environmental Design is a center for providing education for those students who wish to play a role in the planning, design, and management of the outdoor environment. The undergraduate program provides professional instruction in landscape architecture.

The discipline of landscape architecture is both an art and a science, and includes the creation and management of environments which meet human needs and are ecologically sensitive. Whether practicing in urban settings or natural environments, the landscape architect's tools blend horticultural, engineering, and artistic skills with an understanding of natural processes and a sense of stewardship.

For a description of the Bachelor of Landscape Architecture core curriculum, see page 243 in this Bulletin.

SPECIAL PROGRAMS

Under the internship program, qualified students are given the opportunity to gain experience by working in a professional office under the supervision of a registered landscape architect or related practitioner (architects, engineers, or planners).

FIELD TRIPS

Supervised field trips are required of all students in connection with their classes. Students travel at their own expense to designated places of landscape interest in Georgia and adjoining states, accompanied by a member of the teaching staff.

STUDIES ABROAD

Selected students are permitted to enroll in a studies abroad program and may receive credit towards their degree. In conjunction with the School of Art, the School provides a studio program in Italy offering up to six credit hours of instruction in landscape architecture and three credit hours of instruction in art history.

There are also a limited number of spaces in exchange programs in Australia and England. See your advisor for details.

LANDSCAPE ARCHITECTURE CORE CURRICULUM

This program is intended to prepare students for the professional program in landscape architecture. For an explanation and description of the University of Georgia Core Curriculum, see page 168 in this Bulletin.

The Institute of Ecology

Director: Dr. C. Ronald Carroll, 542-2968

The Institute of Ecology, long known for its international research reputation, was approved as an academic school of ecology in 1993. The Institute offers 23 courses for undergraduates and encourages students seeking a B.S. degree in Ecology to complement their classroom education by obtaining credits for internship and research experience.

In addition to lab facilities on campus, students can obtain field research experience at three local sites administered through the Institute of Ecology. The Horseshoe Bend Research Area adjacent to campus, the McGarity Wetlands Preserve in the flood plain of the Alcovy River, and the Odum Watershed, a self-contained 120-acre (49 hectare) watershed approximately 20 miles from campus. The Institute of Ecology maintains collaborative relationships with several other regional research laboratories. Tropical intern and research opportunities are available in Costa Rica and Ecuador. The Institute has a long-standing relationship with the Savannah River Ecology Laboratory in Aiken, S.C., the U.S. Forest Service's Coweeta Hydrological Laboratory near Franklin, N.C., and the Joseph Jones Ecological Research Center in southwest Georgia. The Institute supports research in marine and freshwater ecology, ecology, ecological toxicology, evolutionary ecology, conservation biology, landscape ecology, restoration ecology, agroecosystem ecology, systems ecology, and resource management.

For a description of the Bachelor of Science in Ecology core curriculum, see page 211 in this Bulletin.

The College of Family and Consumer Sciences

224 Dawson Hall, (706) 542-4860 (information);
(706) 542-4847 (Office of Student Services)
FAX: (706) 542-4862
Homepage URL: *www.fcs.uga.edu/*

Administrative Officers

Sharon Y. Nickols, *Dean*
Jan Hathcote, *Associate Dean for Academic Affairs and Research*
Thomas Rodgers, *Associate Dean for Outreach and Extension*
David Wright, *Department Head, Department of Child and Family Development*
Rebecca Mullis, *Department Head, Department of Foods and Nutrition*
Brenda Cude, *Department Head, Department of Housing and Consumer Economics*
Ian Hardin, *Department Head, Department of Textiles, Merchandising & Interiors*

General Information

PURPOSE AND ORGANIZATION

The College of Family and Consumer Sciences offers educational programs that lead to a number of professional careers. The curricula provide well-rounded programs of general, scientific, and technical education.

Upon completing core curriculum requirements, students take specialized professional courses specific to their majors and professional goals. Applied learning experiences and internships are emphasized in all programs of study in order to prepare students for their future work settings. Leadership and communication skills are also emphasized through various college programs and activities as are experiences that promote knowledge of and sensitivity to issues of multicultural diversity.

FACILITIES

Dawson Hall and Speirs Hall, located on South Campus, house the modern and fully equipped teaching laboratories and classrooms for foods, nutrition, and textiles, as well as research and computer laboratories. A calorimetry laboratory is located in Boyd Graduate Studies Building.

The Margaret E. McPhaul Child and Family Development Center houses laboratories for instructional, clinical, and research activities which provide opportunities for observations of and work with infants, children under six, parents, and families. In addition, early intervention and Head Start programs operate as integral parts of the McPhaul Center and provide instructional, research, observational, and participation opportunities with young developmentally challenged children and their families.

The Housing and Demographics Research Center (HDRC) provides housing research, promotes a more rational regulatory environment for the building community, and disseminates research findings to policy makers, interested parties and the general public.

Academic Information

ADVISING

Faculty are responsible for academic advising in the College of Family and Consumer Sciences. New students and students transferring into the College receive initial advising in the Office of Student Services.

DEGREES OFFERED

The College of Family and Consumer Sciences offers the degree of Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.), with majors in Child and Family Development; Child and Family Development/Early Childhood Education: Prekindergarten-Grade 2; Consumer Economics; Consumer Foods; Consumer Journalism; Dietetics; Family and Consumer Sciences Education; Fashion Merchandising; Furnishings and Interiors; Housing; Nutrition Science; and Textile Science. The majors are described under Programs of Study in this Bulletin.

The College also offers both the Master of Science (M.S.) Degree and Doctor of Philosophy (Ph.D.) degree in all departments. For further information, refer to the *Graduate School Bulletin*.

CORE CURRICULUM

For an explanation and description of the University of Georgia Core Curriculum, see page 168 in this Bulletin.

COLLEGE-WIDE DEGREE REQUIREMENTS

CHFD 2100 or HACE 2100 is required of all students pursuing the Bachelor of Science degree in Family and Consumer Sciences.

ACCREDITATION

The College of Family and Consumer Sciences is accredited by the American Association of Family and Consumer Sciences.

SCHOLARSHIPS

There are numerous scholarships available in the College of Family and Consumer Sciences. Additional information can be obtained in the Office of Student Services.

Courses of Instruction

Courses in the College of Family and Consumer Sciences are listed under the following prefixes:

CHFD	Child and Family Development
EFCS	Family and Consumer Sciences Education
FDNS	Foods and Nutrition
HACE	Housing and Consumer Economics
TXMI	Textiles, Merchandising and Interiors

The Daniel B. Warnell School of Forest Resources

Forest Resources Building, (706)542-2686
Fax: (706)542-8356
Homepage URL: *www.uga.edu/~wsfr/*

Administrative Officers

Arnett C. Mace, Jr., B.S., M.S., Ph.D., *Dean*
Bruce C. Bongarten, B.S., Ph.D., *Associate Dean for Academic Programs*
Robert O. Teskey, B.S., M.S., Ph.D., *Interim Associate Dean for Research and Service*

General Information

The Warnell School of Forest Resources was established in 1906 through the vision and generosity of George Foster Peabody. It is the oldest such institution in the southern United States. In 1991 the School was dedicated in honor of the late Daniel B. Warnell, a prominent banker, landowner, and state legislator who made major contributions to rural development, public education, and conservation of forest resources.

The educational, research, and service programs in the School address the use and management of all forest resources.

PURPOSE

The forested lands of the southeastern United States form a large, diverse, and productive ecosystem, furnishing numerous goods and services vital to the well-being of the planet and its inhabitants. They yield wood which is utilized in the manufacture of myriad products and is a key fuel in the region's economic engine. They provide habitat for game and non-game animals and for endangered plant associations. They serve as living filters for aquatic and atmospheric systems, and are places for outdoor recreation, solitude, and reflection.

As society's awareness of the multifarious benefits contributed by forest continues to grow, the demands placed on forest lands have steadily multiplied, making their management more complex and important than at any time in history. A diverse cadre of professionals who understand how forest systems function and how they can be regulated to achieve desired objectives is required to meet this challenge. The School's educational mission is to prepare the resource managers, staff specialists, and research scientists who fill these positions and who will provide leadership in responsible forest land stewardship.

The School's undergraduate majors provide a holistic perspective on forest resources management, and offer concentrated study in each of the resources that comprise the forest ecosystem. The curriculum emphasizes the biological and physical science knowledge base that supports prudent management, the economic, social science, and quantitative skills necessary for rational analysis of management alternatives, and the communication and interpersonal skills required for professional effectiveness. Majors emphasize the timber, wildlife, fisheries, and soil and water resources.

FACILITIES

The Daniel B. Warnell School of Forest Resources is located in a complex of four buildings on south campus. The School manages almost 25,000 acres of forest land including the 800-acre Whitehall Forest, located four miles from the main campus. This forest serves as a field laboratory for instruction and research. Facilities include experimental fish ponds, a wildlife and fisheries laboratory, a tree nursery, and a wood utilization and plant sciences building.

Other major forest areas managed by the School include: 1) the Oconee Forest Park, a recreation and teaching forest located at the edge of the main campus; 2) the B.F. Grant Memorial Forest, a parcel comprising 13,000 acres of Putnam County, used primarily for research and demonstration; 3) the Thompson Mills Forest, which is Georgia's official arboretum; and 4) the 1,500-acre Satilla River Forest, devoted to wildlife and fisheries research. In addition, the School operates the Cohutta Fisheries Research and Extension Center located in northern Georgia about 150 miles from Athens. The School also manages several properties that were given to the University of Georgia Foundation as gifts to the Warnell School of Forest Resources. These include the 2000-acre Warnell Memorial Forest outside of Savannah and the 2500-acre Wheatley Property on Lake Blackshear in southwestern Georgia.

Academic Information

ADVISING

Forest Resources students attending the University of Georgia are advised by faculty and staff of the Warnell School of Forest Resources. Students attending other institutions who plan to enter one of the four forest resources majors at the University of Georgia should contact the Office of the Associate Dean, Warnell School of Forest Resources, for guidance in program planning and course selection.

Selection of appropriate courses to meet degree requirements is the responsibility of the student. Assistance is available through printed material and the School's academic advising program. Students should meet with their advisors each semester to plan programs of study and select courses. Students should pay particular attention to listed course prerequisites when selecting and scheduling classes in the School. Prerequisites are enforced by the OASIS registration system and permission of the advisor and the course instructor is required to override stated prerequisites for all courses in the School.

DEGREES OFFERED

The Warnell School of Forest Resources offers the professional undergraduate degree of Bachelor of Science in Forest Resources (B.S.F.R.) with majors in Forestry, Wildlife, Fisheries and Aquaculture, and Forest Environmental Resources. These majors are described in the Programs of Study section of this Bulletin.

Through the Graduate School, the Warnell School of Forest Resources offers programs of study leading to the Master of Forest Resources, the Master of Science, and the Doctor of Philosophy degrees. Persons interested in these programs should contact the Graduate Coordinator of the Warnell School of Forest Resources or refer to the *Graduate Bulletin* of the University.

ACCREDITATION

The undergraduate majors in Forestry, Wildlife, and Forest Environmental Resources are accredited by the Society of American Foresters (SAF). SAF is the specialized accrediting body recognized by the Council on Post-secondary Accreditation and the U.S. Department of Education as the accrediting agency for forestry in the United States. Additionally, the Wildlife major fulfills the educational requirements for certification as a wildlife biologist by The Wildlife Society. Likewise, the curriculum of the Fisheries and Aquaculture major meets the education requirements for Professional Certification by the American Fisheries Society.

BACHELOR OF SCIENCE IN FOREST RESOURCES DEGREE REQUIREMENTS

To obtain the B.S.F.R. degree, students must successfully complete 60 credits in the pre-Professional Program and 62-65 credits in the Professional Program (depending on major). In addition, students must meet the University's basic physical education and residency requirements. Students will typically spend four semesters in residence in the Professional Program.

Pre-Professional Curriculum

The pre-Professional curriculum meets the University Core Curriculum requirements. It may be completed at the University of Georgia or at other institutions. Students taking pre-Professional course work at another institution should contact the Office of the Associate Dean, Warnell School of Forest Resources, for assistance in planning programs of study and for confirmation of transfer credit. See page 168 of this Bulletin for an explanation and description of the University of Georgia Core Curriculum.

Professional Curriculum

The Professional curriculum consists of 62-65 credits of which 29 are common to all four majors. Courses common to all majors include study in field measures, ecology, soils and hydrology, fish and wildlife management, biometrics, and forest resources management and policy. All students complete a senior project or senior thesis that integrates previous course work.

Forestry majors may choose one of seven Areas of Emphasis. Students majoring in Forest Environmental Resources choose one of three Areas of Emphasis. The Wildlife and Fisheries and Aquaculture majors have no Areas of Emphasis.

A complete listing of required courses in each major and each Area of Emphasis can be found in the Programs of Study section of this Bulletin.

ADMISSION

Pre-Professional Program

Admission to the pre-Professional Program is handled through the University of Georgia Undergraduate Admissions Office. On the UGA application, indicate "Forest Resources" as the school or college in which you plan to enroll and choose Pre-Forest Resources as your major.

Professional Program

To be admitted to the Professional Program, students must first be admitted to the University through the University Admissions Office. Then they must be admitted to the Warnell School of Forest Resources through a separate application procedure. Application forms for admission to the Warnell School are available from the Office of the Associate Dean.

Students may apply for entry to the Professional Program in fall or spring semester. A maximum of 60 students will be admitted each semester. Applications for fall semester admission are due March 1. Applications for spring semester admission are due October 1. *Note that these deadlines may be earlier than University of Georgia application deadlines.*

Eligibility for Admission to the Professional Program

At the time of matriculation in the Professional Program, students must have completed the pre-Professional curriculum, except that up to 8 credits of electives (and/or SPCM 1100) may be deferred if an equal number of credits have been completed from the following courses: FORS 3010-3010L, FORS 3020-3020L, FORS 3300 and CRSS (FORS)3060-3060L.

Admissions Process

- Students who meet the above eligibility requirements and have an overall GPA of 3.0 or higher will be admitted immediately into the Professional Program.
- Students who meet the above requirements and have an overall GPA greater than or equal to 2.5 and less than 3.0 will be admitted into the Professional Program subject to enrollment limitations.
- Students who meet the above requirement and have an overall GPA less than 2.5 may be admitted if openings are available and if they provide satisfactory evidence that they can perform academically at the level expected of students in the Professional Program. Students should submit a statement explaining their academic performance and efforts to improve it.
- Students who have not completed the required course work will be deferred until requirements are met. Students who are deferred or denied admission may appeal the decision to the Associate Dean by written petition.

Student Services and Programs

FINANCIAL AID

In addition to the financial assistance offered through the University's Office of Student Financial Aid, a number of scholarships and awards are available specifically for undergraduate students in forest resources. These awards total about $80,000 annually, and are made possible by donations from forest-related industries and organizations, and from alumni and other interested individuals.

Selection for these scholarships is based on academic achievement, leadership ability, and financial need. To be considered for most scholarships, students must have a resume on file in the Office of Undergraduate Programs. A few scholarships require a separate application form.

INTERNSHIPS AND COOPERATIVE EDUCATION PROGRAMS

An active internship program gives students the opportunity to supplement their classroom studies with practical experience in forest resource management. Students may work with private companies, landowners, conservation organizations, and federal and state agencies.

We also offer a Cooperative Education Program with federal and state agencies such as the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Georgia Department of Natural Resources. Students may alternate semesters of off-campus work with semesters of on-campus study. Although we make every effort to facilitate cooperative education, the arrangement for such programs is usually left to student initiative.

STUDENT ORGANIZATIONS

Participation in School-related extracurricular activities is a tradition among students in the Warnell School of Forest Resources. The Forestry Club, open to all Professional and pre-Professional students, serves a variety of social, service, and professional development functions. Four professional societies, the Society of American Foresters, The Wildlife Society, the American Fisheries Society, and the American Water Resources Association, sponsor student chapters, which are open to Professional and pre-Professional students. These organizations foster professional development and the opportunity to practice leadership skills. Students who excel scholastically may qualify for election to membership in Xi Sigma Pi, the forestry honor society.

Courses of Instruction

Courses for the Warnell School of Forest Resources are listed under the prefix FORS, Forest Resources.

The Henry W. Grady College of Journalism and Mass Communication

Journalism Building, (706) 542-1704
FAX: (706) 542-2183
Homepage URL: *www.grady.uga.edu*
E-Mail: gradyabj@arches.uga.edu

Administrative Officer

John Soloski, Ph.D., *Dean*

General Information

PURPOSE

The mission of the Grady College of Journalism and Mass Communication is to prepare students to be effective users and practitioners of the mass media, to assist the mass media in providing more and better services for their consumers, and to assist the public in using the mass media to meet personal and community needs. Teaching, research, and service are integral parts of this mission.

1. Teaching. The College provides instruction at undergraduate and graduate levels to prepare students for careers in advertising, broadcast news, magazines, newspapers, news services, photojournalism, publication management, public relations, telecommunications, and new media. Teachers help students to think critically about the media and understand the roles and impact they have in society, the history of mass media, and how to deal with ethical and legal questions as well as help them learn how to gather, analyze, and present information in a clear, concise way through various media. The role of a free and responsible press in a democracy characterized by diversity is emphasized.

Degrees include the Bachelor of Arts in Journalism (A.B.J.), Master of Arts in Journalism and Mass Communication (M.A.), Master of Mass Communication (M.M.C.), and the Doctor of Philosophy in Mass Communication (Ph.D.) The A.B.J. and

M.M.C. degrees are intended primarily to prepare practitioners for employment in the mass media. The M.A. and Ph.D. degrees also help students prepare for positions in mass media research and teaching.

2. Research. Through basic and applied research, the College seeks to raise and answer questions related to the media and their roles in and influence on society. This research is facilitated by college units, including the James M. Cox, Jr. Center for International Mass Communication and Research, the James M. Cox, Jr. Institute for Newspaper Management Studies, and the Dowden Center for New Media.

3. Service. Through public service and outreach, its centers and institutes, and its faculty working on individual projects, the Grady College provides myriad services for the mass media and the public. Beneficiaries of service programs include the public, the mass media, and students from elementary grades through college.

ORGANIZATION

The Grady College is organized into three departments: The Department of Advertising and Public Relations, The Department of Journalism, and The Department of Telecommunications.

FACILITIES

The Grady College is housed in a modern multimillion-dollar communication center that provides some of the best instructional facilities available. Included are classrooms equipped with color televisions for closed-circuit broadcast, two large theater-style auditoriums, audio studios, color-equipped television studios, complete packages of portable color television cameras and videotape recorders, videotape editing facilities, satellite communications equipment, typesetting equipment, state of the art advertising, graphics, photography, news writing and editing laboratories, seminar rooms and conference rooms.

The Drewry Learning Resources Center supplements the University of Georgia Libraries.

An elevator makes all floors accessible to persons with disabilities.

Academic Information

ACCREDITATION

The Grady College is accredited by the Accrediting Council on Education in Journalism and Mass Communications.

ACADEMIC ADVISING

Journalism and Mass Communication students are assigned to professional academic advisers.

Ultimately it is a student's responsibility to stay informed of degree requirements and register for appropriate courses; however, advisers are available to assist in planning schedules for registration and for reviewing progress toward the A.B.J. degree.

Pre-journalism students are advised by professional academic advisers in the Franklin College of Arts and Sciences and are expected to be ready to apply to the Grady College upon reaching junior standing.

DEGREES

The Grady College offers an undergraduate degree of Bachelor of Arts in Journalism (A.B.J.) and advanced degrees of Master of Arts in Journalism and Mass Communication (M.A.), Master of Mass Communication (M.M.C.), and Doctor of Philosophy in Mass Communication (Ph.D.).

MAJORS

Seven majors are offered: Advertising, Broadcast News, Public Relations, Magazines, Newspapers, Publication Management and Telecommunications.

GENERAL DEGREE REQUIREMENTS

A.B.J. degree candidates must meet general degree requirements applicable to all students at the University as set forth in the general information section of this Bulletin.

COLLEGE-WIDE DEGREE REQUIREMENTS

No more than two courses or seven semester credit hours in journalism and mass communication courses earned before admission to the College, whether at UGA or another institution, may be applied toward satisfaction of requirements for the A.B.J. degree. At least 20 semester credit hours of journalism and mass communication courses which satisfy A.B.J. degree credit must be earned at the University of Georgia.

A total of 121 semester hours (includes one hour of PE) must be successfully completed to earn the A.B.J. degree. At least 90 semester hours must be taken outside the college, of which at least 65 must be in liberal arts and sciences courses. No more than 30-32 semester credit hours in journalism and mass communication courses may be applied toward requirements for the major.

A grade of C or higher must be earned in any journalism and mass communication course.

Core Curriculum

Hours

For a description and explanation of the University of Georgia Core Curriculum, see page 168 of this Bulletin. 60

Professional Curriculum

Hours

I. MAJOR REQUIREMENTS 30-32

Course descriptions are listed under a later section titled Courses of Instruction

II. MAJOR ELECTIVES 15

Complementary, upper level courses chosen from no more than two disciplines in the liberal arts and sciences. Courses cannot be journalism and mass communication, academic assistance, aerospace studies or military science, physical education, university orientation, and any courses that are developmental, remedial or preparatory in nature or do not earn graduation credit.

III. GENERAL ELECTIVES 13-15

Courses at any level in any disciplines other than journalism and mass communication, academic assistance, aerospace studies or military science, physical education, university orientation, and any courses that are developmental, remedial or preparatory in nature or do not earn graduation credit.

BASIC PHYSICAL EDUCATION 1

Total Semester Hours Required for the ABJ Degree 121

CHANGE OF MAJOR

A change of major within the College requires approval by the Admissions Committee and cannot be assumed as automatic; therefore, careful thought should be given to a choice of major at the time of application. Further, approval to change majors does not imply approval of courses already taken in another major. Loss of graduation credit could occur.

DOUBLE MAJORS AND DEGREES

Students may not earn more than one undergraduate degree within the Grady College.

SECOND UNDERGRADUATE DEGREE

A person who has earned a baccalaureate degree in other than journalism and mass communication or a closely related major from an accredited institution may apply for a second undergraduate degree.

Applications are accepted from those who have completed core areas A-E and F (including foreign language and economics) and have met minimum requirements in cumulative and overall grade point averages and English proficiency.

A point system based on academic achievement and test scores determines a student's standing among other applicants. Those presenting the highest qualifications are accepted each semester of the academic year.

Depending on the major, satisfactory completion of 30-32 semester hours of journalism and mass communication courses are required to earn a second undergraduate degree. For more information, contact Undergraduate Services, Room 201, Journalism and Mass Communication.

POST-BACCALAUREATE AND TRANSIENT STUDENTS

Post-baccalaureate and transient students are non-degree seeking at the University of Georgia and do not apply for admission to the Grady College.

Post-graduate students have earned an undergraduate degree and usually are enrolled for a limited time.

Transient students are candidates for degrees at other institutions and may be admitted as pre-journalism majors in the College of Arts and Sciences for a semester with the intention of transferring credits to their parent institutions.

Availability of journalism and mass communication courses for students in these categories cannot be assumed.

MASS COMMUNICATION MINOR

The minor consists of 18 hours of undergraduate courses in journalism and mass communication. Contact the Office of Undergraduate Services, Room 201, Grady College of Journalism and Mass Communication, to declare the minor or obtain information.

GRADUATION REQUIREMENTS

The graduation coordinator monitors each student's progress toward completion of requirements for the A.B.J. degree. The purpose is to identify and solve problems that could delay graduation. Students may make an appointment with the coordinator in the Office of Undergraduate Services, Room 201, Grady College of Journalism and Mass Communication.

HONORS PROGRAM

The College encourages superior academic achievement by endeavoring to identify, recruit, and assimilate into the University's academic life students with outstanding academic potential.

Honors students may be able to develop programs of study that have greater flexibility and include more challenging courses.

Qualified students have opportunities for individual readings and projects, honors theses, honors option courses, area study majors, and a combined A.B.J./M.B.A program offered cooperatively by the Grady College of Journalism and Mass Communication and the Terry College of Business.

COURSE CHALLENGE

Students who are degree candidates in the Grady College and are currently enrolled for resident course work may be allowed to attempt a challenge of certain journalism and mass communication courses if they can demonstrate skills mastered through experience outside the classroom. Requirements may differ but can include a review of work skills, a practical examination, a written test, and an oral examination. A decision must be made prior to the examination whether the challenge is for credit or for exemption without credit. A course may be challenged only once and the challenger may not be currently or previously enrolled in the course or a prerequisite for the one being challenged. The attempt to challenge must first be approved by the head of the department that teaches the course.

PETITION

A waiver in Grady College rules or curriculum requires a written petition to the College's Executive Committee which meets once each semester. Petition forms may be obtained in the Office of Undergraduate Services, Room 201. To facilitate a timely response, petitions must be submitted not later than midpoint of the semester to the same office.

ENGLISH PROFICIENCY TEST

The English Proficiency Test is administered by the Testing Center in Clark Howell Hall on an individual basis by special arrangement with the Center. A nominal fee is charged.

The test may be taken an unlimited number of times; however, only *twice* per semester. For anyone needing to take the test, it is important to know that it is not administered during the second full week of classes.

ORIENTATION

Orientation for newly-admitted students is an effort to make the transition into the Grady College as smooth and enjoyable as possible. Key faculty and staff in the College inform students of such matters as advising, obtaining permission of department to register for courses, internships, rules, requirements and procedures specific to the Grady College.

KEYBOARDING SKILLS

Students enrolling in journalism and mass communication courses are expected to have adequate keyboarding skills to meet course requirements.

Other Services and Programs

STUDY ABROAD

Students who want to add an international learning experience to their college education may do so by participating in one of the more than 30 study abroad programs run by the University of Georgia in 18 countries.

NATIONAL STUDENT EXCHANGE

Grady students who participate in the National Student Exchange Program should plan their course selections early and carefully with their advisers. It is important to remember that credit earned through NSE is evaluated as transfer credit.

Students majoring in journalism and mass communication at other colleges and universities that participate in NSE are usually admitted to the University of Georgia as pre-journalism majors in the College of Arts and Sciences for a specified period of study and do not apply for admission to the Grady College.

PLACEMENT

The Placement Office, Room 209 in the Grady College, assists in locating internships and entry-level employment. Each fall it produces an Employment Prospectus that is distributed to hundreds of employers around the country. Students are encouraged to submit a brief biography with information about their qualifications and employment or internship preferences for inclusion in the Prospectus.

INFORMATION

A Grady College brochure can be requested from the Dean's Office, Room 237, Grady College of Journalism and Mass Communication, University of Georgia, Athens, GA 30602-3018.

Courses of Instruction

Courses for the College of Journalism and Mass Communication are listed under the following prefixes:

ADPR	Advertising and Public Relations
JOUR	Journalism
JRLC	Journalism Core
TELE	Telecommunications

The School of Law

Law Building, (706) 542-7140
FAX: (706) 542-5556
Homepage URL: *www.lawsch.uga.edu*

Administrative Officers

David E. Shipley, B.A., J.D., *Dean*
Paul M. Kurtz, B.A., J.D., LL.M., *Associate Dean*
Gabriel M. Wilner, A.B., D.P.A., LL.B., LL.M., *Associate Dean*

General Information

PURPOSE

Because its first duty is to prepare men and women for the legal profession, the School of Law stresses excellence in teaching. It seeks to impart to its students a broad understanding of the nature of the legal system and the analytical and other skills necessary for effective participation in the profession. It also seeks to instill in its students a keen sense of professional integrity and an awareness of their responsibility as guardians of the law.

In addition to its emphasis on teaching, the School of Law recognizes its role as a center for scholarly research and service in the law. It seeks to explore the problems of society and to contribute to their resolution through teaching, research, and service. As a part of the University, the School of Law endeavors to contribute in a significant way to the life of the University community and to participate in interdisciplinary efforts to advance learning.

METHOD OF INSTRUCTION

In general, the School operates under the case method of instruction. The student studies actual cases, deducing from them the principles of law involved. This approach tends to develop in the student the power of analysis of legal problems. In addition, however, the study of cases is supplemented by statutory and textual materials. Instruction is also given in the drafting of legal instruments.

Practical instruction in the preparation and trial of cases is given in clinical programs, involving both simulated situations and work with practicing attorneys on litigation and other legal matters. Exercises conducted relate to the preparation of pleadings, examination and cross-examination of witnesses, writing of briefs, presentation of arguments to the court and jury, taking of cases from lower courts to appellate courts, and other related subjects.

FACILITIES

The School of Law is housed in a modern complex built on the original wooded quadrangle of the University's North Campus. Completed in 1967, the main building occupies 135,739 square feet. In addition to lecture halls, seminar rooms, and administrative and faculty offices, Hirsch Hall houses a 500-seat instructional auditorium and federal-style courtroom. Two student lounge areas and student organization offices are provided in the complex.

The law library, with its two-story ceiling and glass wall, is spacious and well-illuminated. The library houses more than 117,000 titles, which places it in the top 25 among United States law schools. The collection includes a comprehensive listing of material on Anglo-American law and extensive holdings in the law of international relations and in foreign law.

A law library annex opened in 1981 houses a spacious reading room, shelf space for one-third of the present collection, student journal offices and audio-visual instructional facilities. The library offers the LEXIS and WESTLAW computerized research systems. Dean Rusk Hall, home of the Rusk Center for International and Comparative Law, was opened in 1996. In addition to the Center, Rusk Hall contains faculty offices, library shelving and a technologically advanced courtroom, suitable both for teaching and use in moot court activity. Rusk Hall has added 35,000 square feet of space to the Law School facilities.

ACCREDITATION

The School of Law is a member of the Association of American Law Schools and is on the approved list of the American Bar Association and the State Bar of Georgia.

Academic Information

DEGREES OFFERED

The School of Law offers the Juris Doctor and Master of Laws degree. Joint degree programs are also available. Complete information about these degree programs may be found in the Law and Graduate School Bulletins.

GENERAL ADMISSION REQUIREMENTS

An applicant for admission as a candidate for the degree of Juris Doctor must hold a bachelor's degree from an accredited (as defined in AALS and ABA regulations) college or university. Compliance with minimum standards does not, however, guarantee admission. Acceptable required work connotes more than satisfaction of minimum academic requirements; rather, it represents substantial scholastic attainment. Moreover, suitability of applicants for admission is gauged not only by their undergraduate record, but also by their character and reputation, the nature of their training and experience, and by their demonstrated aptitude for the study of law.

The School of Law does not require a specific pre-legal course of study. The prospective law student is encouraged to seek a broad general education which will tend to develop ability to communicate both orally and in writing and impart substantive knowledge of genuine intellectual content. Any subject content, regardless of field, which helps develop clear and systematic thinking constitutes sound preparation for the study of law.

LAW SCHOOL ADMISSION TEST

Questions relating to the Law School Admission Test, the Law School Data Assembly Service and application procedures should be addressed to the Admissions Office, School of Law, The University of Georgia, Athens, Georgia 30602.

TRANSFER STUDENTS

The dean may, at his discretion, give full credit for work completed at other law schools. Transfer should be requested only after completion of one year of study, and prior to beginning the second year of study, in order to meet residence requirements for a degree at the University of Georgia. Transfer requests should be made directly to the Law School Admissions Office.

VISITING STUDENTS

Students in good academic standing at other law schools may be admitted as visiting students to enroll for a summer term or an academic year or semester. Prospective visiting students should contact the Law School Admissions Office for information about admission policies and procedures.

Student Services and Programs

SCHOLARSHIPS, LOANS AND STUDENT EMPLOYMENT

Law students are eligible for scholarships, grants, loan funds and employment as research assistants through the University and the Law School. Write to the Director of Admissions of the School of Law for further information.

CLINICAL AND WRITING PROGRAMS

Law students attending the University of Georgia may participate in activities which include three scholarly journals, several clinical programs, Moot Court and Mock Trial competitions, student government, legal fraternities, and many special interest organizations.

The Georgia Law Review, the *Georgia Journal of International and Comparative Law*, and the *Georgia Journal of Intellectual Property*, edited entirely by students, are nationally circulated publications which provide a forum for articles by professors, judges, attorneys, and students on developments in the legal field.

Practical education in criminal and civil procedure is a benefit of the Prosecutorial Clinic, Legal Aid and Defender Clinic, and the Civil Clinic. Under supervision of practicing attorneys, students have the opportunity to develop counseling, investigatory and trial skills. Under Georgia law, certified third-year students are permitted to try cases in local civil and criminal courts.

The School of Law sponsors teams in numerous national and regional Moot Court and Mock Trial competitions. Team members are drawn from outstanding candidates in annual intramural competitions.

Georgia's Student Bar Association is affiliated with the Law Student Division of the American Bar Association. Among the many student interest organizations are the Environmental Law Association, Women Law Students Association, Black Law Students Association, the Equal Justice Foundation, the Federalist Society, and the Georgia Society of International and Comparative Law.

CONTINUING LEGAL EDUCATION

In 1965, the School of Law joined with the State Bar of Georgia and the law schools of Mercer and Emory Universities to establish the Institute of Continuing Legal Education in Georgia. In 1978, the Institute of Continuing Judicial Education was created through the sponsorship of the School of Law and Georgia's Judicial Council. The two institutes, which are housed in Athens, plan and conduct seminars and short courses for judges and attorneys throughout the State of Georgia.

SIBLEY LECTURES

Supported by a private foundation, the John A. Sibley Lectureship in Law brings to Athens outstanding legal scholars each of whom deliver a formal lecture as well as interact with students, faculty, and alumni.

PLACEMENT

The School of Law offers assistance to every law graduate in securing suitable professional employment. Through the Office of Legal Career Services, the student is offered guidance and counseling in selecting an employment objective. While the state of Georgia continues to attract most Law School graduates, students accept positions throughout the country and the world. Graduates serve as judicial clerks, corporate counsel, government attorneys, public interest lawyers, and prosecutors, as well as in private practice.

The College of Pharmacy

Wilson Pharmacy Building, (706) 542-5278
FAX: (706) 542-5269
Homepage URL: *www.rx.uga.edu*

Administrative Officers

Svein Oie, Cand. Pharm., Ph.D., *Dean*
George E. Francisco, B.S., Pharm.D., *Associate Dean*
Joseph T. DiPiro, B.S., Pharm. D., *Assistant Dean*

General Information

PURPOSE

The College of Pharmacy provides for the comprehensive academic needs of the profession of pharmacy. The College's doctor of pharmacy degree program prepares students for the practice of pharmacy and the delivery of pharmaceutical care. Its graduate program prepares individuals for professional specialization and careers in teaching and research. The post-graduate educational needs of the profession are met through the College's continuing education and nontraditional doctor of pharmacy programs. Faculty research supports all of these programs and contributes to the advancement of the body of pharmaceutical knowledge.

FACILITIES

The College of Pharmacy is housed in the Robert C. Wilson Pharmacy Building located on South Campus of the University of Georgia. The Wilson Pharmacy building has served as the home of the College since its completion in 1964. Additional educational sites are maintained on the campus of the Medical College of Georgia in Augusta. To provide for the experiential application of pharmaceutical knowledge, clinical training of pharmacy students is conducted in Athens, Augusta, Atlanta, Savannah, and other sites around the state.

ACCREDITATION

The College of Pharmacy is accredited by the American Council on Pharmaceutical Education.

Academic Information

DEGREES OFFERED

The Doctor of Pharmacy (Pharm.D.) degree is awarded to students who successfully complete a six-year study of prescribed courses. The first two years (pre-pharmacy) may be completed at any accredited institution of higher education. Complete information about degrees may be found in the *College of Pharmacy Bulletin*.

GRADUATE STUDY

The Graduate School of the University of Georgia offers the Master of Science and Doctor of Philosophy degrees in various specialty areas of pharmacy. Complete information about these degree programs may be obtained by calling the College of Pharmacy (542-1911) or by visiting the College's web site (*www.rx.uga.edu*).

ADMISSION REQUIREMENTS

To be admitted to the professional degree programs in the College of Pharmacy, a student must complete pre-pharmacy curriculum requirements. Applicants to the professional program must take the Pharmacy College Admission Test (PCAT). The fall test date prior to the projected entrance date is preferred. The application deadline is February 1 of each year.

PRE-PHARMACY CORE CURRICULUM

For a description and explanation of the University of Georgia Core Curriculum, see page 168 in this Bulletin. For specific pre-pharmacy requirements, contact the Office of the Dean, College of Pharmacy.

The School of Social Work

Tucker Hall, (706) 542-3364
FAX: (706) 542-3282
Homepage URL: *www.ssw.uga.edu*

Administrative Officers

Bonnie L. Yegidis, B.A., M.S.W., Ph.D., *Dean*
Nancy P. Kropf, B.A., M.S.W., Ph.D., *Associate Dean*
Katheryn B. Davis, B.A., M.S.W., Director, *Undergraduate Program*

General Information

The Bachelor of Social Work degree is the first professional social work degree. This program of study prepares the student for beginning professional practice as a social worker. The liberal arts base combined with appropriate professional courses provide the fundamental knowledge and skill needed to assume the role of a beginning practitioner. The appropriate social work value and ethical base necessary for professional practice is also a central part of the curriculum. The student exits the B.S.W. program as a generalist in the profession of social work.

PURPOSE

The goal of the School of Social Work is to provide an education designed to prepare the undergraduate student for beginning professional social work practice.

This goal is to be realized through:

(1)Providing intellectual stimulation for students in a search for knowledge and truth and to aid them in developing problem-solving processes for professional use in helping individuals, families, groups, and communities.

(2)Helping to develop students' learning and introspective stances which will serve their lifelong learning needs and development of self-awareness.

(3)Motivating students to develop the capacity to evaluate their own practice, and to evaluate and use the research findings of others.

(4) Enabling students to gain knowledge and to develop values and skills appropriate for beginning professional social work practice as a generalist.

FACILITIES

The School of Social Work is located in Tucker Hall on South Campus. Extensive University resources enrich the curriculum of the School of Social Work. Research facilities include the resources of the Computer Center, the Institute of Behavioral Research, and the Social Work Research Center.

ACCREDITATION

The Bachelor of Social Work degree program is accredited by the Council on Social Work Education.

Student Services and Programs

ACADEMIC ADVISING

Selection of appropriate courses to meet degree requirements is the responsibility of the student. Certain printed material and the School's academic advising program are available to assist the student. Students are expected to arrange appointments with the advisors each semester for planning programs of study and course selection.

Each student in the School of Social Work is assigned a faculty advisor. In addition to assisting students with selection of an appropriate course of study, advisors assist upper division students in their professional development.

HONORS PROGRAM

Qualified students are encouraged to participate in the University of Georgia Honors Program. Appropriate academic advising is provided for B.S.W. students who are also in the Honors Program.

STUDENT ORGANIZATIONS

The College Social Work Association is the School's official baccalaureate student organization providing B.S.W. students with opportunities to participate in volunteer service and educational presentations, and to interact with other social work majors. Meetings are held periodically throughout the academic year.

Academic Information

DEGREE OFFERED

The School of Social Work offers the undergraduate degree of Bachelor of Social Work (B.S.W.).

ADMISSION TO THE UPPER DIVISION PROFESSIONAL PROGRAM

The academic program for students seeking the B.S.W. degree is composed of two parts: (1) Pre-professional enrollment for freshmen, sophomores, juniors and transfer students preparing for entry into the professional program; and, (2) the professional foundation program completed during the senior year.

Pre-professional enrollment is open to students meeting regular admission requirements at the University of Georgia. Admission to the professional foundation program occurs at the junior level. Students must have satisfactorily completed 60 semester hours plus one hour of P.E., including all core requirements. A student must have an overall and cumulative GPA of 2.5 or better and a combined average of 3.0 in SOWK 2101 and 2154. Prior to entering the professional program, all applicants must complete 50 clock hours of an advisor-approved human service experience and provide proof of professional liability insurance. See program director for details. In addition, throughout the program evaluation of the student's performance will determine the student's compatibility to the professional practice of social work.

UNDERGRADUATE DEGREE REQUIREMENTS

Students are required to acquaint themselves with general degree requirements applicable to all students of the University as set down in the Academic Information section of this Bulletin. Specific requirements for the B.S.W. degree are listed in the Programs of Study section of this Bulletin.

The primary aim of the B.S.W. program is excellence in the general practice of social work, and its curriculum and methods of pedagogy are designed to produce an environment in which this excellence can flourish. The program of study leading to the B.S.W. degree requires 126 semester hours plus one hour of P.E. and offers a clearly defined progression of course work culminating in the applied study of the general practice of social work during the senior year.

During the first two years of study students are expected to meet liberal arts objectives through completion of courses which make up the core requirements of the University of Georgia. The core is divided into six broad content areas: Essential Skills, Institutional Options, Humanities/Fine Arts, Science/Math/Technology, Social Sciences, and Social Work Related Courses.

In consultation with the advisor, during the junior year students select additional courses which further enrich the liberal perspective and which prepare students for entry into the professional foundation program. Students complete two courses in social work during their first three years of study: SOWK 2101, The Social Welfare Institution and SOWK 2154, The Profession of Social Work.

Building on the liberal arts base, the senior or professional foundation year is designed to prepare students for beginning social work practice through a year-long practicum and course offerings which establish:

- a base of knowledge in understanding human behavior from a person-in-environment perspective;
- introductory knowledge and skills related to social work practice with individuals, families, groups, organizations and communities from a person-in-environment perspective;
- knowledge of historic and current institutional policies which serve as a general framework for the provision of social services in the United States; and
- introductory knowledge of analytical and evaluative methods of knowledge building and application in social work practice and social welfare settings.

Content regarding human diversity is infused throughout the professional curriculum, building on specific courses in multicultural and Women's Studies taken as part of the core. Transfer credit for courses in social work will be evaluated on a case-by-case basis. In no case will courses numbered 3000 or above be accepted from institutions which are not accredited by the Council on Social Work Education. No transfer credit will be accepted for SOWK 5524, 5534, 5544, 5835, and 5845. For further information contact the Office of the Director, Undergraduate Program, School of Social Work, Tucker Hall.

NOTE: All students will be expected to complete 50 clock hours in an advisor-approved human services setting and attend an orientation session before they are permitted to enroll in professional foundation course work. Proof of professional liability insurance will be required before students are permitted to enroll in SOWK 5835.

Courses of Instruction

Courses in the School of Social Work are listed under the prefix SOWK.

The College of Veterinary Medicine

Veterinary Medicine Building, (706) 542-5728
FAX: (706) 542-1004
Homepage URL: *www.vet.uga.edu*
Email: ywilson@vet.uga.edu

Administrative Officers

Keith W. Prasse, B.S., M.S., D.V.M., Ph.D, *Dean*
Sheila W. Allen, D.V.M., M.S., *Associate Dean for Academic Affairs*
Harry W. Dickerson, B.V.Sc., Ph.D., *Associate Dean for Research and Graduate Affairs*
Edward A. Mahaffey, D.V.M., Ph.D, *Associate Dean for Public Service and Outreach*
Paula Tolbert, M.P.A., *Assistant to the Dean*

General Information

PURPOSE AND ORGANIZATION

Veterinary medicine is a unique combination of medical, agricultural, and biological sciences. It is a health profession that applies principles of biomedical sciences to health and disease in animals. Veterinary medical research also has important direct and indirect implications on human health.

The University of Georgia College of Veterinary Medicine is designed to meet the educational needs of prospective veterinarians from the Southeast. In addition to students from Georgia, students from South Carolina, West Virginia, and Delaware are accepted through a Southern Regional Education Board agreement. A limited number of students who are residents of other states also may be accepted. Up to 86 students may be admitted to the four-year curriculum each fall. The number of students accepted from South Carolina, West Virginia, and Delaware is subject to change by the Southern Regional Education board each year. Interested students should contact the Office for Academic Affairs for current information.

The College of Veterinary Medicine also has postgraduate instructional responsibilities, which are described in the separate bulletin of the College. Postgraduate training is necessary to prepare students for careers in teaching, research, and clinical specialties.

A program of continuing education for veterinary practitioners is offered to keep the profession up-to-date on advances in the science and art of veterinary medicine.

Research programs are conducted in the Veterinary Medical Experiment Station to ensure the health of the animals in Georgia and to protect the human population from those diseases transmittable from animals to man. Studies are conducted on diseases of farm animals, pets, wildlife, poultry, fish, marine life, and laboratory animals. These research programs are an integral part of the training of graduate students.

The College faculty also functions in various service capacities through the facilities of the College's Teaching Hospital, the Southeastern Cooperative Wildlife Disease Study, the Poultry Diagnostic and Research Center, and the Veterinary Diagnostic Laboratories located in Athens and Tifton, Georgia.

FACILITIES

The College is made up of clinics, offices, laboratories, and classrooms designed to meet the needs of students, faculty, and practicing clinicians. Facilities for animal surgery, autotutorial instruction, a library, and a computer-assisted learning center are available in the College. In addition, there are offices with adjacent laboratories, a complete electron microscopy suite, laboratory animal facilities, and laboratories for parasitology, physiology, pharmacology, toxicology, and surgery. The Teaching Hospital wing houses the Veterinary Medical Teaching Hospital, classrooms, and the Reading Room. Additional space for maintaining animals is available at a nearby farm and at the Poultry Diagnostic and Research Center.

Diagnostic Laboratories

Dr. Charles A. Baldwin, Director, Tifton Lab

Dr. Doris M. Miller-Liebl, Director, Athens Lab

The College maintains diagnostic laboratory facilities in Tifton and Athens to assist veterinarians in diagnosing animal diseases. Funded by the Georgia Department of Agriculture, the laboratories are designed to handle problems concerning large and small domestic animals, as well as laboratory and exotic animals. Diagnostic laboratory services include pathology, microbiology, toxicology, and serology. Both facilities are staffed by veterinary medical diagnosticians and technicians. Though the labs exist primarily as a service to animal owners through their veterinarians, many diagnostic laboratory cases are utilized by faculty members for instruction and research.

Veterinary Teaching Hospital

Dr. Douglas Allen, Jr., Hospital Director

Ronald Stewart, Hospital Administrator

The foremost objective of the Veterinary Teaching Hospital is to provide clinical experience for students. This method of instruction enables the veterinary medical student to gain familiarity with veterinary clinical cases under the supervision of practicing clinicians. The staff is composed of faculty members with expertise in various specialties of veterinary medicine , including internal medicine, surgery, radiology, dermatology, ophthalmology, cardiology, neurology, anesthesiology, reproduction, food animal and equine medicine and surgery, and herd health management. In addition, hospital facilities are available to private practitioners for referrals or consultation and for continuing education programs.

ACCREDITATION

The College is officially recognized as an accredited institution by the Council on Education of the American Veterinary Medical Association.

Academic Information

Students in the College of Veterinary Medicine follow a four-year program of study. The first three years of the curriculum are designed to integrate a sound knowledge of the basic medical sciences with clinical application. The fourth year of the curriculum is devoted entirely to the application of basic medical sciences to veterinary medical principles and procedures in a clinical situation.

The curriculum has core courses which all students must take, and multiple elective opportunities. The final 14 months of the curriculum is divided into clinical blocks of 15-30 instructional days. Students must satisfactorily complete a minimum of 174 semester credit hours to receive the DVM degree.

DEGREES OFFERED

The professional clinical degree offered by the College is the Doctor of Veterinary Medicine. The College also administers graduate programs leading to master's and doctoral degrees.

COURSES OF INSTRUCTION

Undergraduate courses in the College of Veterinary Medicine are listed under the following prefixes:

AVMD	Avian Medicine
MMIB	Medical Microbiology
VETM	Veterinary Medicine
VPHY	Physiology and Pharmacology

Professional and graduate courses are listed in the bulletin of the College of Veterinary Medicine.

REQUIREMENTS FOR ADMISSION

Although a baccalaureate degree is not required, the prospective veterinary student should pursue a well-rounded undergraduate degree program. The requirements for admission to the College of Veterinary Medicine are based on the premise that the program of training of a veterinarian is a continuous one shared by both the undergraduate colleges and the College of Veterinary Medicine. The responsibility of the undergraduate training program is to provide the prospective student with the technical information and skills necessary to complete the D.V.M. program, and also to help develop a broad background of experience and interest which will promote a full realization of their potential as individuals and members of society.

Entering students must acquire basic scientific knowledge to prepare for the rigorous curriculum of the College. Such information is ordinarily obtained in the following undergraduate courses:

- English
- Humanities and social studies
- Physics
- Inorganic and organic chemistry
- Biochemistry
- General and advanced (upper-division) biology

The required courses for admission to the College of Veterinary Medicine can be completed at any accredited college. A student's choice of major should be based on his or her interests and abilities.

Specific information on admission policies is available on the web at *www.vet.uga.edu* or from the Office for Academic Affairs.

COMBINED B.S.-D.V.M. PROGRAM

The combined B.S.-D.V.M. program is available at The University of Georgia. Students may qualify for admission to the College of Veterinary Medicine by completing three years of undergraduate work at the University and applying the first year of the D.V.M. curriculum toward completion of the B.S. degree.

APPLICATION

Application packets are available in July from the Veterinary Medical College Application Service of the Association of American Veterinary Medical Colleges. Applications are to be completed electronically at the service's Web site: *www.aavmc.org*. The applicant must submit a transcript from each institution of higher education attended by the applicant. Completed applications must be received electronically by VMCAS by October 1. To be eligible for consideration, the applicant must be able to complete all required courses by the end of spring term of the calendar year in which he or she intends to matriculate.

ELIGIBILITY

The University of Georgia is an equal opportunity institution and does not discriminate on the basis of age, sex, or ethnic origin. Applications from qualified students of minority groups are actively encouraged.

In order to be considered for admission, the applicant must meet at least one of these two criteria:

- a cumulative grade point average of 3.0 or greater;
- a combined score on the verbal and quantitative portions of the GRE of 1200 or greater.

All admissions to the College of Veterinary Medicine are conditional, based on the applicant's continued satisfactory academic work between the date of his or her conditional acceptance and the end of spring term prior to entry into the College.

REQUIRED TESTS

Each applicant is required to take the Graduate Record Examination and the GRE Biology Subject Test. Information about the GRE can be obtained from the GRE Web site (*www.GRE.org*).

NOTIFICATION OF APPLICANTS

Notification of the action of the College on all applications will be mailed directly to applicants before April 15 of each year. The notification will inform applicants that they are either accepted conditionally, placed on the alternate list, or not accepted.

STUDENT SERVICES AND PROGRAMS

Students are governed by a code of ethical conduct that is administered by the faculty and students. The official student governing body is the student chapter of the American Veterinary Medical Association. The College offers a variety of student services, including in-house tutorial and counseling services, a mentor program, scholarships, assistance with financial aid, and placement services.

For More Information

Specific information about programs at the professional and graduate levels may be found on the Web (www.vet.uga.edu), and in the College of Veterinary Medicine Bulletin or the Graduate School Bulletin, copies of which may be obtained by writing:

D.V.M. Programs
Office for Academic Affairs
College of Veterinary Medicine
The University of Georgia
Athens, Georgia 30602-7372
E-mail: ywilson@vet.uga.edu

Graduate Programs
Office for Graduate Studies
College of Veterinary Medicine
The University of Georgia
Athens, GA 30602
jkelley@vet.uga.edu

The Graduate School

Boyd Graduate Studies Research Center, (706) 542-1787
FAX: (706) 542-3219
Email: gradadm@arches.uga.edu
Homepage URL: *www.gradsch.uga.edu*

Administrative Officers

Gordhan L. Patel, A.B., Ph.D., *Dean*
F. Douglas Boudinot, B.S., Ph.D., *Associate Dean*
Thomas W. Hodler, B.S., M.A.T., Ph.D., *Associate Dean*
Josie B. Bumgarner, B.B.A., *Assistant to the Dean*
Janet A. Sandor, B.A., B.S.Ed., M.Ed., Ph.D., *Director of Graduate Admissions*
Krista Haynes, A.B., *Graduate Program Administrator*
Curtis D. Byrd, B.S., M.Ed., *Director, Recruitment and Retention*

General Information

PURPOSE

The Graduate School has primary responsibility for the administration of advanced study in all schools and colleges of the University.

ORGANIZATION

Matters of policy relating to graduate education are determined by the graduate faculty through the graduate council. The graduate faculty consists of faculty members appointed by the president on the basis of scholarly competence (including published research or appropriate creative activities), intellectual leadership, and experience with graduate education. The policies determined by the graduate council are administered by the dean of the Graduate School.

The general degrees Master of Arts and Master of Science are offered in 26 and 40 disciplines, respectively. The Doctor of Philosophy degree is offered in 71 disciplines.

Professional master's degrees are offered in 22 areas. The Specialist in Education degree may be earned in 23 fields. Professional doctoral degrees are offered in education, music, and public administration.

FACILITIES

The Graduate School has access to the resources of the entire University. Of particular value are the University libraries, containing over 3,400,000 books, serials and documents, and many other items including manuscripts, photographs, drawings, and maps. The collections support the curricular and research needs of the campus and are available to library users both on the campus and across the state.

The research program at the Oak Ridge Associated Universities, Oak Ridge, Tennessee, makes available facilities for research problems and thesis writing. Two coastal facilities, the Marine Institute on Sapelo Island and the Skidaway Institute of Oceanography, are available to students and faculty of the University for research and training in marine sciences. The Institute for Behavioral Research encourages a pooling of the expertise of faculty and students from various departments to attack significant social and behavioral problems at both basic and applied levels. The Institute of Higher Education is an instruction, service, and research agency of the University and works closely with other educational agencies and institutions in cooperative programs dealing with planning, development, and evaluation. The Institute of Ecology promotes research in ecology, especially large-scale, system-level studies of major environments such as forested watersheds, wetlands, lakes, rivers, tropical rain forests, and agroecosystems. Additional details are presented in the *Graduate School Bulletin.*

ASSISTANTSHIPS AND SCHOLARSHIPS

A variety of support for graduate students is available in the form of graduate assistantships, teaching assistantships, and research assistantships.

Further information may be obtained from the dean of the Graduate School. Applications for the University-wide assistantships must be filed in the appropriate department by February 15 of each year; departmental awards may normally be applied for at any time.

Academic Information

ADMISSION

Persons holding a baccalaureate degree from any institution accredited by the proper regional accrediting association are eligible to apply for admission to the Graduate School. Applicants should have ranked in the upper half of their undergraduate class and should have completed the equivalent of an undergraduate major in the field in which they propose to study. Application forms may be obtained from the Office of Graduate Admissions. Applicants for admission must submit two copies of official transcripts from all colleges and universities attended, except the University of Georgia, two official copies of scores on the required entrance examination, three letters of recommendation, and a $30.00 nonrefundable application-processing fee. Materials submitted in support of an application will not be returned.

Applications and supporting credentials from domestic students must be received in the Office of Graduate Admissions by the following deadlines: Fall semester, July 1; Spring semester, November 15; Summer, Pre-session, April 1; and Summer, all other sessions, May 1. Applicants are urged to apply as early as possible up to one year in advance of the desired matriculation date. Departments may have earlier application deadlines which take precedence over those established by the Graduate School. Applicants should consult the departments for their specific deadlines. For information concerning deadlines for international applications, refer to the section entitled International Applicants.

Each completed application, with supporting materials, is referred to the department in which the applicant proposes to study, where it is considered by the faculty of that department. No applicant will be admitted without the recommendation of an academic unit. Final approval is given by the dean of the Graduate School.

An applicant is admitted for a specific semester. Admission is valid only when the person registers for the specified semester.

The applicant, however, may request the Office of Graduate Admissions to defer his/her registration to another semester provided that the application has not been on file for longer than six months. If the application has been on file longer than six months, a new application must be submitted.

Applicants may not register unless they have received an official acceptance letter from the Graduate School. Students participating in the Honors Program and those registered in the School of Law may enroll in graduate courses with the approval of their advisors and the dean of the Graduate School.

ENTRANCE TESTS

Entrance test scores appropriate for each application must be sent to the Office of Graduate Admissions directly by the responsible testing agency. All test scores are subject to a five-year time limitation.

Scores on the verbal and quantitative sections of the General Test of the Graduate Record Examinations (GRE) are required for admission as a prospective candidate for most graduate degrees. The Miller Analogies Test (MAT) may be used in lieu of scores on the GRE for admission to most Master of Education and Specialist in Education degree programs. The GMAT is required for applicants seeking admission as prospective candidates for the Master of Business Administration and the Master of Accountancy degrees. Applicants for the Master of Marketing Research degree may submit either the GMAT or the GRE. The Master of Arts and Doctor of Philosophy programs in business administration accept the GMAT or the GRE. The Master of Arts and Doctor of Philosophy programs in economics require the GRE. In all cases, applicants should consult the departments for specific information.

The Graduate Record Examinations and the Graduate Management Admission Test are offered several times a year at numerous testing centers in the United States and abroad. Advance registration is required. Registration forms and detailed information on the availability and character of each examination may be obtained from the Office of Graduate Admissions or by writing to the Educational Testing Service, Princeton, New Jersey 08541. The Miller Analogies Test is given at various colleges and universities as approved by The Psychological Corporation. For information concerning the test as given at the University of Georgia, contact the Office of Testing and Evaluation, Clark Howell Hall, 706-542-3183. For information concerning the test as given at other approved testing centers, contact The Psychological Corporation, 555 Academic Court, San Antonio, Texas 78204-2498.

ADDITIONAL INFORMATION

To request admission information, write to the Office of Graduate Admissions, The University of Georgia, Athens, Georgia 30602-7402; phone (706)542-1787; email gradadm@uga.cc.uga.edu; WWW address: *www.uga.edu/~grad_sch/admit.html*. Inquiries about facilities for advanced study and research, programs of study, and specific departmental requirements should be addressed to the appropriate department. More detailed information is given in the *Graduate School Bulletin*, which may be obtained by contacting the Office of Graduate Admissions.

INTERNATIONAL APPLICANTS

Since several months may be required to secure needed information and to process an application from abroad, international applicants are urged to submit application materials as early as possible, but no more than one year in advance. The application and all supporting materials of an international applicant must be received in the Office of Graduate Admissions by the following deadlines: Fall semester, May 15; Spring semester, October 15; Summer semester, February 15. Due to the intensity of summer study and the limited number of classes offered, international applicants are not encouraged to apply for summer semesters. Departments may have earlier application deadlines which take precedence over those established by the Graduate School. Applicants should consult the departments for their specific deadlines.

The application must be supported by two official transcripts from all colleges and universities attended, except the University of Georgia, two official copies of test scores on an approved entrance test, a $30.00 nonrefundable application fee, and three letters of recommendation. Recommendations from teachers familiar with higher education programs in the United States are advantageous. Foreign applicants, for whom English is not their native tongue, must submit TOEFL (Test of English as a Foreign Language) scores, in addition to scores on an approved entrance examination.

CLASSIFICATION OF GRADUATE STUDENTS

Only those applicants who are formally admitted to the Graduate School will be eligible to register for graduate courses. At the discretion of individual schools or departments and with the approval of the dean of the Graduate School, applicants may be considered for admission to any one of the following classifications:

(1) *Prospective Candidate for a Degree.* Applicants who meet all requirements for admission to a degree program may apply as prospective candidates for a graduate degree. Applicants must submit the following to the Office of Graduate Admissions: the general application for admission, a $30 application-processing fee, two official copies of transcripts from each institution attended except the University of Georgia, and two copies of official entrance test scores. Applicants also must submit three letters of recommendation directly to the department to which they are applying, as well as any supplemental information required by the department. Applicants are responsible for contacting the department graduate coordinator for information on any special requirements and any supplemental materials which may be needed.

Applicants upon whom some condition has been placed by the major department and/or the Graduate School may be admitted provisionally to a degree program if recommended by the department and approved by the graduate dean. Applicants for the Specialist in Education degree are not eligible for provisional admission.

(2) *Nondegree (ND).* Applicants who do not intend to pursue a degree but who wish to take courses for professional advancement, licensure, or certification purposes, and who hold a baccalaureate degree or higher degree from a regionally accredited institution, should apply for nondegree status. Applicants must submit the following to the Office of Graduate Admissions: the general application for admission, a $30 application-processing fee, two official copies of transcripts from the institution which awarded the highest degree, and a statement of purpose. The statement of purpose should be completed in the space provided on the reverse side of the general application. Applicants are responsible for contacting the department graduate coordinator for information about any special requirements or supplemental materials which may be needed.

Nondegree students who are later admitted as prospective degree candidates may apply a maximum of nine hours of course work taken in the nondegree status toward a graduate degree program. The inclusion of such course work on a program of study is subject to approval of the major professor, the department graduate coordinator, and the dean of the Graduate School. Courses taken in the nondegree status may not be included on a program of study for the Specialist in Education degree.

(3) *Graduate Transient (TRANS).* Transient admission may be granted to students in good standing at regionally accredited graduate schools who wish to enroll for one semester at the University of Georgia. Applicants requesting this status must submit the following to the Office of Graduate Admissions: general application for admission, $30 application-processing fee, and certification of graduate standing in a regionally accredited institution. Additional information may be required by departments for admission to this classification; therefore, applicants should contact the appropriate department. Students admitted in this classification who later wish to enroll as

prospective candidates for a degree must make formal application to the Graduate School.

IRREGULAR STUDENTS

A student registered in the University as an irregular student cannot register for graduate courses. Course work taken in this classification cannot be counted for credit toward any graduate degree.

COMBINED DEGREE PROGRAMS

The Graduate School offers certain combined degrees with other schools and colleges in the University.

Selected students in the College of Arts and Sciences may be eligible for completion of combined AB and MA or BS and MS programs in a four-year period. Students in the College may also be allowed to complete AB and MBA or BS and MBA programs in five years. Students interested in these degree objectives should contact the University Honors Program.

Certain students in the College of Arts and Sciences or the College of Journalism and Mass Communication may be allowed to complete AB and MBA, or BS and MBA, or ABJ and MBA degrees in five years. Interested students should contact the appropriate school or college and the University Honors Program.

Certain students in the College of Family and Consumer Sciences may be eligible to pursue the combined degrees of BSHE and MBA. In the College of Journalism and Mass Communication, students may be allowed to pursue combined programs leading to the ABJ and MBA degrees. In the Terry College of Business, students may be eligible to pursue combined programs leading to the BBA and MAcc degrees. All these combined degree programs are designed to be completed in five years.

Students interested in the JD and MBA or JD and MAcc four-year combined degree programs should contact the School of Law and the Terry College of Business.

Selected pharmacy students may enter a combined degree program in which they receive the BS degree in pharmacy at the end of their third professional year and the MS degree in pharmacy at the end of one additional year.

ENROLLMENT IN GRADUATE COURSES—LAW/UNDERGRADUATE STUDENTS

Students enrolled in the School of Law, who hold a baccalaureate degree from an accredited university/college and who are in good standing, may enroll in graduate courses with approval of their advisor and the dean of the Graduate School. An approval form may be obtained in the School of Law.

Undergraduate students, participating in the Honors Program and who are in good standing, may register for graduate courses with approval of their advisor and the dean of the Graduate School. An approval form may be obtained in the Honors Program Office.

Undergraduate students, having received prior approval, may enroll for up to six semester hours of credit to be included in a graduate program of study if they are within three hours of completing requirements for the undergraduate degree. They may enroll for three hours of such credit if they are within six hours of completing degree requirements. This credit must be in 4000- or 5000-numbered courses which also have 6000 or 7000 listings. If work in the 4000- or 5000-numbered courses is satisfactory, credit at the graduate level will be granted after admission and registration in the Graduate School of the University of Georgia. A form to request prior approval may be obtained in the Graduate School.

COURSE NUMBERS AND LOAD

Courses numbered 8000 and 9000, taught by members of the graduate faculty, are advanced graduate courses and seminars that provide educational experiences at the highest level in a graduate student's program of study. Courses numbered 6000 are fundamental knowledge courses; those numbered 7000, except thesis 7300, are technique and professional courses. Courses numbered 6000 and 7000 are normally taken early in the graduate student's program of study. Joint undergraduate/graduate courses, numbered 4000/6000 and 5000/7000, in which undergraduate and graduate students are mixed, are not normally used to provide the core requirements of a graduate degree program. Such courses may be used as electives and as service courses taken in other departments.

A full course load for a graduate student is nine hours per semester during the academic year and six hours during the summer session. A student who holds an assistantship that requires from one-fourth to one-third time service must register for a minimum of nine hours each semester. A student who holds an assistantship that requires four-ninths to one-half time service must register for a minimum of six hours each semester. A student enrolling for over 15 hours per semester must receive approval from the Graduate School. Any graduate student using University facilities and/or staff time must register for at least three hours each semester. A student must be registered for a minimum of three hours of credit the semester in which degree requirements are completed.

PROBATION AND DISMISSAL

Students may be dismissed by their department at the end of any semester if they have not made sufficient academic progress to warrant continuance of study. Termination of students will follow policies and procedures adopted by the department. Dismissal by an academic department may be appealed to the dean of the Graduate School after all avenues of appeal have been exhausted at the departmental level. When students are terminated by a department, but not simultaneously by the Graduate School, they may apply for admission to another graduate program if they wish to do so.

Students with a cumulative graduate course average below 3.0 for two consecutive semesters are placed on academic probation by the Graduate School. They then must make a 3.0 or higher graduate average per term each succeeding semester that their overall cumulative graduate average is below 3.0. These students are no longer on probation when their cumulative graduate average is 3.0 or above. If they make below a 3.0 graduate average per semester while on probation, they are dismissed. When students repeat a graduate course, the last grade will be utilized to calculate the cumulative graduate average that is used for probation and dismissal. Grades of S, U, I, and V will not be used in calculating the cumulative graduate average. When students are dismissed under the terms of this policy, they may not apply for admission to another graduate program offered by the University. Students who are dismissed by the Graduate School for academic reasons may appeal the dismissal to the dean of the Graduate School. The appeal must be submitted within 10 working days following receipt of notice of dismissal. Information concerning the appeal process may be obtained in the Graduate School.

Degrees Offered

The degrees offered by the Graduate School are listed below. For specific requirements see the *Graduate School Bulletin.*

GENERAL DEGREES

Master of Arts

The Master of Arts degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: anthropology, art history, business administration, classics, comparative literature, economics, education, English, French, geography, German, Greek, history, journalism and mass communication, Latin, linguistics, mathematics, mathematics non-thesis, music, philosophy, political science, religion, Romance languages, sociology, Spanish, and speech communication.

Master of Science

The Master of Science degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: agricultural economics; agricultural engineering; agronomy; anatomy (veterinary); animal science; artificial intelligence; biochemistry and molecular biology; biological engineering, botany; cellular biology; chemistry; child and family development; computer science; conservation ecology and sustainable development; dairy science; ecology; entomology; environmental economics; environmental health; food science; foods and nutrition; forest resources; genetics; geology; horticulture; housing and consumer economics; marine sciences; medical microbiology; microbiology; pharmacology (veterinary); pharmacy; physics; physiology (veterinary); plant pathology; poultry science; psychology; statistics; textiles, merchandising and interiors; toxicology; veterinary parasitology; and veterinary pathology.

Doctor of Philosophy

The University established this degree for the purpose of providing properly qualified students with the opportunity to pursue research and other scholarly activity beyond the point that is possible in programs for the master's degree. At present, opportunity for such advanced graduate work is provided in adult education, agricultural economics, agronomy, animal and dairy science, animal nutrition, anthropology, art, biochemistry and molecular biology, biological and agricultural engineering, botany, business administration, cellular biology, chemistry, child and family development, communication sciences and disorders, comparative literature, computer science; counseling and student personnel services, counseling psychology, drama, ecology, economics, educational psychology, English, entomology, exercise science, food science, foods and nutrition, forest resources, genetics, geography, geology, health promotion and behavior, higher education, history, horticulture, housing and consumer economics, instructional technology, language education, linguistics, marine sciences; mass communication, mathematics, mathematics education, medical microbiology, microbiology, middle school education, music, pharmacology (veterinary), pharmacy, philosophy, physical education, physics, physiology (veterinary), plant pathology, political science, poultry science, psychology, reading education, Romance languages, science education, social foundations of education, social science education, social work, sociology, special education, speech communication, statistics, textile sciences, toxicology, veterinary parasitology, and veterinary pathology.

This degree will not be granted upon the completion of any definite amount of work prescribed in advance. It will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough acquaintance with a specific field of knowledge. Evidence of such attainment must be provided through the presentation of an acceptable dissertation based upon independent research and passing of such written and oral examinations as may be prescribed.

PROFESSIONAL DEGREES

Master of Accountancy

This degree program prepares students for careers in public accounting or for executive positions in private accounting. It is open to students who hold a Bachelor of Business Administration degree or its equivalent.

Master of Agricultural Economics

This degree is designed for students who wish to acquire specialized training in agribusiness. The program blends business and economics with the applied science of agriculture, providing methods for solving real-world problems. An internship and technical report are required in lieu of a thesis.

Master of Agricultural Extension

This degree is designed especially for county agricultural extension workers, agricultural educators, and other continuing education professionals engaged in informal educational settings. In addition to the general Graduate School requirements, one year of field experience in agricultural extension, or its equivalent, is required.

Master of Applied Mathematical Science

The Master of Applied Mathematical Science is a terminal degree program designed for students who seek a broad raining in applied quantitative methods as preparation for professional employment in business, government, or industry. For such students, this program will provide a structure that blends various applied mathematical sciences with particular reference to their application to real-world problems.

Master of Art Education

This program is designed to improve the professional competency of teachers and supervisors of art.

Master of Arts for Teachers

Programs leading to the Master of Arts for Teachers degree are designed to prepare teachers for employment in secondary schools and junior colleges. The degree may be earned in English, French, German, Romance languages, and Spanish.

Master of Avian Medicine

This degree is designed to provide veterinarians with specialized training in the diagnosis, treatment, and prevention of poultry diseases.

Master of Business Administration

This program is designed for the student who desires sound training beyond the baccalaureate degree as preparation for a career in business.

Master of Education

This degree is designed for the student whose vocational objectives require preparation for teaching, supervision, and/or first line administration in grades P-12 and other educational or professional agencies. The Master of Education degree may be obtained in the following areas: adult education; agricultural education; business education; college student affairs administration; communication sciences and disorders; computer-based education; early childhood education; educational leadership; educational psychology; elementary education; English education; exercise science, family and consumer sciences education; foreign language education; guidance and counseling; health promotion and behavior; human resource and organizational development; instructional technology; marketing education; mathematics education; middle school education; occupational studies; physical education; reading education; recreation and leisure studies; rehabilitation counseling; safety education; science education; social science education; special education; and technological studies.

Master of Fine Arts

This program is for students in the creative and performing arts whose professional objectives require advanced skills in art and drama.

Master of Forest Resources

This is a professional program designed to be a terminal degree program for forest resources managers.

Master of Historic Preservation

This program is designed to prepare students for a wide range of careers in the conservation and management of historic resources in both the built and natural environments.

Master of Home Economics

This program prepares students for professional careers in home economics and related professions. This degree may be earned in the areas of child and family development and foods and nutrition.

Master of Landscape Architecture

This program provides advanced training for landscape architects and graduates in related fields.

Master of Laws

The LLM program is essentially a fourth year of JD studies, affording an opportunity for further study in fields not fully covered in undergraduate law work.

Master of Marketing Research

This degree program is designed to develop marketing research professionals with a solid understanding of business and marketing analyses. The program of study includes 39 semester hours of graduate work, including two semesters of internship, and begins each June. Students without business courses must complete foundation courses before entering the program.

Master of Mass Communication

This program serves those students whose career goals indicate that additional course work will be more advantageous to them than the completion of the traditional thesis required in the Master of Arts. The additional course work provides an opportunity for more breadth and depth of exposure to areas which may lay the foundations of career development, whether in additional mass communication courses or in cognate courses that tie into professional goals.

Master of Music

This degree offers major concentrations in performance, piano pedagogy, chamber music/accompanying, conducting, woodwinds, composition, and music literature.

Master of Music Education

This program prepares students for professional careers in teaching/supervising school music or in music therapy.

Master of Plant Protection and Pest Management

This program is designed to produce graduates with comprehensive, multidisciplinary training in plant pathology, entomology, and weed science for employment by industrial, extension, and regulatory agencies.

Master of Public Administration

Advanced professional training for graduates who plan to work in public administration is provided by this program.

Master of Social Work

This program emphasizes both clinical social work practice and community social policy.

Specialist in Education

This degree is planned for the student who seeks advanced specialized training in a selected area in order to improve teaching, supervisory, and/or administrative skills.

The program for the Specialist in Education degree shall consist of a minimum of 30 semester hours of study at the graduate level beyond the master's degree. The Specialist in Education degree may be obtained in the following areas: adult education; art education; communication sciences and disorders; early childhood education; educational leadership; educational psychology; elementary education; English education; foreign language education; guidance and counseling; instructional technology; mathematics education; middle school education; music education; occupational studies; physical education; reading education; safety education; school psychology; science education; social science education; and special education.

Doctor of Education

This degree provides advanced professional training for careers in teaching, administration, and other educational services. At the present time, the degree is offered in the following fields: adult education; art education; early childhood education; education of gifted; educational leadership; educational psychology; elementary education; exercise science; higher education; instructional technology; mathematics education; music education; occupational studies; physical education; reading education; recreation and leisure studies; science education; social science education; and special education. Specialization in research skills and in subject fields appropriate to public schools, higher education, and other educational and/or helping agencies is provided.

Doctor of Musical Arts

The program of study leading to the Doctor of Musical Arts degree provides advanced professional, academic, and research preparation for music careers in teaching, performing, composing, and conducting. Major concentrations are offered in music education, performance, composition, and choral conducting. The School of Music should be contacted regarding applied music options available within the performance and conducting areas.

Doctor of Public Administration

The objective of the program is to provide doctoral-level training for several client groups. First, the program will prepare students to serve in executive or upper managerial levels in local, state, and federal jurisdictions. Second, the program will prepare students for a variety of institutional settings that have significant interfaces with public agencies. These include various institutes, private planning agencies, and consulting organizations. Third, the program will help prepare individuals for specialized research and teaching careers.

PROGRAM FOR TEACHER CERTIFICATION

For Majors in Education

The Georgia State Board of Education is the agency which awards professional certificates. The College of Education has been approved to offer graduate programs designed to qualify students for fifth-year, sixth-year, and seventh-year professional certificates.

For other details and requirements see the *Graduate School Bulletin.*

For Majors in Fields Other Than Education

Candidates for degrees in fields other than education may meet the requirements for a teaching certificate at the fifth-year level. For requirements see the *Graduate School Bulletin.*

GRADUATE CERTIFICATE PROGRAMS

Conservation Ecology and Sustainable Development

The University offers a certificate in conservation ecology and sustainable development through the Institute of Ecology. Any graduate student in a natural science or a social science degree program at the University is eligible to apply. For information, contact the Graduate Coordinator, Institute of Ecology, Ecology Building (706) 542-2958.

Environmental Ethics

The University of Georgia has a Faculty of Environmental Ethics which offers a certificate program at the graduate level. The certificate program contains a variety of courses devoted partially or entirely to issues of value and the environment. For information, contact the office at (706) 542-0935, eecp@arches.uga.edu, or see the Web site at *www.phil.uga.edu/eecp.*

Geographic Information Science

The University offers a Graduate Certificate in Geographic Information Science. This field comprises all phases of processing spatially-referenced data, including data acquisition (remote sensing, global positioning systems), data analysis (vector- and raster-based representational media, photogrammetry, spatial statistics), data interpretation, and data display (cartography). The program is designed with three components: a set of prerequisite skills necessary to gain entry into the program, a set of courses required of all students enrolled in the program, and a set of elective courses that permit exploration of more advanced themes in geographic information science. For further information, contact Dr. E. Lynn Usery, Department of Geography, GG Building, (706) 542-2345.

Gerontology

The University awards a Certificate in Gerontology to graduate students meeting certain requirements. For information concerning this program, contact Dr. Leonard W. Poon, Director, Gerontology Center, Candler Hall, (706) 542-3954.

Global Policy Studies

The University awards a Certificate in Global Policy Studies to graduate students meeting certain requirements. Students may earn the certificate as a supplement to a regular degree program. For information, contact Dr. William O. Chittick, Center for the Study of Global Issues, Franklin House, (706) 542-6633.

Historic Preservation Studies

The University awards a Certificate in Historic Preservation Studies to graduate students meeting certain requirements. Students are required to complete 18 hours of credit, which includes 9 hours of certificate core requirements with the remaining 9 hours to be selected from the historic preservation curriculum. For additional information contact Professor John C. Waters, Coordinator of Graduate Studies in Historic Preservation, School of Environmental Design, Caldwell Hall, (706) 542-4706.

Marriage and Family Therapy

The University awards a Pre-Professional Certificate in Marriage and Family Therapy to graduate students meeting certain requirements. For information contact the Coordinator of this certificate program, Dr. Arthur Horne, Counseling and Human Development Services, 402 Aderhold Hall, (706) 542-4107.

Women's Studies

A 15-hour graduate Certificate in Women's Studies is available to those students who either hold a graduate degree or are pursuing one at the University. The purpose of the Certificate is to expose students to the rapidly expanding interdisciplinary scholarship on women and gender. For information concerning the certificate program, contact Dr. Mary Carruth, Assistant Director and Program Advisor, Benson Building, 1200 S. Lumpkin Street, mcarruth@arches.uga.edu, (706) 542-2846.

Division of Academic Assistance

233 Milledge Hall, (706) 542-5436
FAX: (706) 542-0476
Homepage URL: *www.uga.edu/daa*

Contact Person: Dr. Sherrie Nist, Director
snist@arches.uga.edu, (706) 542-0459

The primary goal of the Division of Academic Assistance is to enhance the academic success of University of Georgia students by providing a wide range of courses, programs, and services. Entering students, who are mandated by the institution or by the Board of Regents (Developmental Studies students), enroll in Division courses based on placement test results. For mandated students, the Division provides structured courses in English (ACAE), mathematics (ACAM), and reading and study strategies (ACAR.) The Division also provides a variety of additional courses and services open to all University students. UNIV courses, academic counseling, and the Academic Center serve the entire campus.

Student Placement

Any student placing in the Division's English or mathematics courses must complete Academic Assistance requirements before enrolling in credit-bearing English and mathematics courses. With the exception of Developmental Studies students, those placing in the reading/studying course may enroll in credit-bearing courses. Student who are required to enroll in Academic Assistance courses must satisfy all requirements by the time they have earned 20 credit hours. Mandated students are allowed a maximum of 12 semester hours or three attempts, whichever comes first, to complete an area (English, mathematics, and reading/studying).

Academic Assistance Curriculum

Based upon performance on University placement tests, students may be required to take Academic Assistance courses in some or all of the following areas: English, mathematics, and reading/studying. Academic Assistance courses carry institutional credit that does not count toward graduation; however, course credit does count toward maintaining the HOPE Scholarship. Students who are mandated to take courses from only one or two program areas may take regular University courses that do not require the content or skills of the mandated Academic Assistance courses.

ENGLISH (ACAE)

The objective of the English courses is to prepare students for the kinds of writing required in English 1101 and other University courses. To meet that objective, Academic Assistance English courses stress strategies for generating ideas and improving writing fluency, conventions of academic usage and style, patterns for organizing thought and arranging written material, and critical thinking and analysis. In the classroom and in individualized instruction, students receive extensive practice drafting, editing, and revising expository and persuasive essays.

MATHEMATICS (ACAM)

The goals of the mathematics courses are to develop and strengthen the students' mathematics skills so that they can be successful in their entry-level mathematics courses and other courses requiring elementary mathematics reasoning. Academic Assistance mathematics courses develop and strengthen students' thinking, reasoning, and problem-solving abilities, as well as their study strategies. The program offers mathematics courses in intermediate algebra.

READING/STUDYING (ACAR)

The goal of the reading/studying course is to encourage autonomous learning by increasing reading proficiency and by teaching students reading and study strategies prerequisite for success in University courses. Instruction and practice are provided in reading comprehension, general study strategies, vocabulary development, and test preparation techniques. Instruction is linked to University reading/studying demands and the course incorporates applications to university-level texts and supplementary materials.

Academic Counseling

Counselors in the Division offer both individual and small group assistance to students needing academic counseling. Specific academic concerns such as time management, test anxiety, and motivational problems are addressed in these sessions. Counselors also teach structured courses under the UNIV prefix.

UNIV Courses

The Division offers elective courses to all entering and continuing students under the UNIV prefix. Two UNIV courses, UNIV 1102—Learning to Learn and UNIV 1103—Strategies for Academic Success, are the oldest of the series. These courses assist students in becoming life-long learners by focusing on cognitive, metacognitive, and affective strategies that students need to be successful in college. Other UNIV courses focus on improving writing, grammar, critical thinking, problem solving, and mathematics. (See page 588 for a complete listing and description of UNIV courses.)

The Academic Center

The mission of the Academic Center is to assist students in developing the skills necessary to achieve academic success at the University of Georgia. The staff in the Academic Center strive to provide individual, group, audio-visual, and computer-assisted approaches to learning in an effort to improve students' math, writing, reading, learning, thinking, and study skills. The Academic Center houses a Tutorial Program and a Learning Center, and offers an Outreach Service and a series of Academic Workshops. The Center is located on the first floor of Milledge Hall and all services are free to University students.

TUTORIAL PROGRAM

The Tutorial Program provides free individual and small group tutoring to all University students. Trained undergraduate and graduate peer tutors offer assistance in many undergraduate level core courses, including mathematics, chemistry, biology, accounting, economics, statistics, Spanish, French, Italian, and several others. Appointments and walk-in services are available. Call 542-7575 for more information.

LEARNING CENTER

Graduate and professional level staff in the Learning Center work with students individually and in groups in several areas of instruction:

Mathematics: Tutoring and computer-based assistance in Algebra, MATH 1060, 1090, 1101, and 1113.

Study Skills: Help with topics such as test taking, reading rate and comprehension, note-taking, and test preparation skills.

Writing: Help with writing assignments, grammar, English as a Second Language (ESL), and preparation for standardized tests.

Counseling: Academic counseling on topics such as test anxiety, personality assessment, time management, career exploration, and learning styles.

ACADEMIC SUCCESS WORKSHOPS

A series of free workshops are offered throughout the semester on a variety of topics related to academic success, including "Keeping the HOPE," "Avoiding Procrastination," and "Learning Styles." All workshops are offered in Milledge Hall. Times and topics vary by semester. Call 542-7575 for a current schedule.

R.E.A.C.H.*OUT*

Realizing Educational Achievement and Changing Horizons (R.E.A.C.H.*Out*) is a free outreach service available to any campus organization interested in an academic workshop. Topics are similar to those presented in the Academic Success Workshops, but they can also be tailored to specific needs. Call 542-7575 to request a program.

SATELLITE OFFICE

The Division of Academic Assistance also offers services through a satellite office located in the rotunda in Brumby Hall. An Academic Specialist for Housing coordinates a variety of services for the Colonial Area, including free tutoring in Brumby and Creswell Halls, academic workshops, and academic counseling. Call 583-0403 for further information or consult our webpage at www.uga.edu/daa/reshalls.htm.

Courses of Instruction

See page 305. Courses offered under the Division of Academic Assistance are listed under the following prefixes:

ACAC	Academic Assistance Counseling
ACAE	Academic Assistance English
ACAM	Academic Assistance Mathematics
ACAR	Academic Assistance Reading
UNIV	University Orientation

Division of the Armed Services

The Division of the Armed Services consists of the Department of Military Science and the Department of Aerospace Studies. The Reserve Officer Training Corps programs are designed to develop leadership qualities and to give students an understanding of the Armed Forces and how they support the national policies and interests of the United States. In particular, ROTC programs are charged with the mission of commissioning second lieutenants who have the qualities, attributes, and educational credentials essential for service as junior officers in the Army or Air Force.

Department of Aerospace Studies

Hardman Hall, (706) 542-1751
Homepage URL: *www.uga.edu/~afrotc/title.html*
Email: AFROTC@arches.uga.edu

Air Force ROTC offers male and female students a course of study designed to complement their individual academic major. Aerospace Studies courses are available to all UGA students. Upper division courses, AIRS 3000 and AIRS 4000 series, require permission of the department. Students enrolled in the program represent a broad cross section of the UGA student body. Enrollment in either the two-year or the four-year program offers each student an additional future career option. The student has an opportunity to explore and evaluate Air Force career opportunities while earning a college degree. Completion of the AFROTC curriculum is the initial step in the education of the professional officer and provides a firm understanding of aerospace concepts, the Air Force mission, organization, and operation. Students who complete officer candidacy requirements are commissioned when they receive a bachelor's degree. Newly commissioned officers may be granted a delay in entering active duty for the purpose of seeking advanced degrees.

GENERAL PROGRAM (GMC and POC)

The Air Force ROTC program consists of two phases: the General Military Course (GMC) and the Professional Officer Course (POC); each phase requires four semesters of study on campus. The GMC materials deal primarily with the various Air Force organizations and their missions, as well as the history of the Air Force. GMC courses meet for three hours each week, including two hours of Leadership Lab. The POC materials emphasize student involvement in learning and practicing management and leadership techniques; the senior year course also deals extensively with the political, economic and social factors relating to the formulation and implementation of national security policy. Communicative skills are stressed throughout the entire AFROTC curriculum. The junior and senior cadets meet for five hours each week, including two hours of Leadership Lab. Completion of the GMC is not necessarily required for entry into the POC. Transfer students and other students unable to participate in the on-campus GMC may substitute a six-week field training period for the GMC course. Veterans can be awarded full credit for the freshman and sophomore courses based on their active military experience. **Application for the six-week field training session must be accomplished by January 10 preceding the fall semester in which the student becomes a junior.**

Air Force ROTC field training is offered during the summer months at selected Air Force bases throughout the United States. Students in the four-year program participate in four weeks of field training, usually between their sophomore and junior years. Students applying for entry into the two-year program must successfully complete six weeks of field training prior to enrollment in the Professional Officer Course. The major areas of study in the four-week field training program include junior officer training, aircraft orientation, career orientation, survival training, base functions and Air Force environment, and physical training.

The major areas of study included in the six-week field training program are essentially the same as those conducted at four-week field training and in the General Military Course including Leadership Laboratory.

MINOR IN AEROSPACE STUDIES

Contact the department for requirements or refer to the Bulletin Web site at www.bulletin.uga.edu.

WOMEN CADETS

Air Force ROTC offers its full range of programs to women cadets. Women cadets are eligible to compete for AFROTC college scholarships, and they receive the same benefits as their male counterparts. A commission as an officer (second lieutenant) is tendered at the time the University grants the bachelor's degree to those completing the POC.

PLACEMENT CREDIT

Students who have completed ROTC courses in essentially military preparatory schools or junior colleges may be given appropriate credit. Students who have taken high school ROTC should contact the professor of aerospace studies for placement. Individuals with prior service may also be given placement credit.

SELECTION FOR THE PROFESSIONAL OFFICER COURSE (POC)

Selection for the POC is based on interest in the Air Force together with achievement records of academic ability, observed leadership traits, and the results of a mental officer qualification test and physical examination. Selection into the program is on a competitive basis and all application criteria must be accomplished **prior** to the 1 March deadline.

PAY

When attending either field training course, students are furnished transportation or payment for travel plus pay at the current rate of approximately $375 per month. They are furnished all uniforms and receive free medical and dental care while at field training. A nontaxable allowance of $150 per month during two academic years is paid to all POC and scholarship cadets. This fee is in addition to any other scholarship benefits held by students.

SCHOLARSHIPS

The College Scholarship Program (CSP) is available to selected four, three, and two-year students participating in AFROTC programs. This scholarship consists of payment of tuition fees, book reimbursement allowance, and the monthly allowance of $150 mentioned above, for each scholarship year. Scholarship consideration is predicated on student ability, performance and potential. Special scholarships are available for minority students and for selected technical and non-technical majors. Minimum GPA for application ranges between 2.35 and 3.65, depending on the type of scholarship.

FLIGHT SCREENING PROGRAM

Pilot and navigator candidates are selected during their junior year. These competitive slots are open to all physically qualified male and female students. Eyesight requirement for pilots is 20/50 and 20/200 for navigator candidates.

Pilot candidates will attend a US Air Force-sponsored Light Aircraft Training Program following graduation. This program consists of approximately 21 hours of dual flying and 30 minutes solo flying time in a light single-engine aircraft. The purpose of the Light Aircraft Training Program is to screen those pilot candidates who have the necessary aptitude and attitude for formal USAF undergraduate pilot training.

LEADERSHIP LABORATORY

Leadership Laboratory is taken an average of two hours per week throughout the student's enrollment in AFROTC. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. Leadership Laboratory involves a study of Air Force customs and courtesies; drill and ceremonies; career opportunities in the Air Force;

and the life and work of an Air Force junior officer. Students develop their leadership potential in a practical, supervised laboratory, which typically includes visits to Air Force installations and orientation flights.

STUDENT OBLIGATIONS

When entering the professional officer course, a student must have at least two full academic years remaining to complete his/her college requirements for an undergraduate or graduate degree or a combination of the two. Each POC student is required to enlist in the Air Force Reserve and to execute a written contract with the government. This contract requires a student to complete the POC and to accept a commission as a second lieutenant if tendered. The initial commitment for serving in the Air Force is four years. GMC students do not incur a commitment unless they are on scholarship.

AIR FORCE ROTC UNIFORMS

Uniforms will be issued at no charge to all AFROTC students taking Aerospace Studies classes. After uniform issue, if Aerospace Studies classes are dropped prior to commissioning, uniforms must be returned. Upon commissioning, students may purchase their uniforms for 50% of cost.

Courses of Instruction

See page 305. Courses offered through the Department of Aerospace Studies are listed under the prefix AIRS.

Department of Military Science

Military Building, (706) 542-2612
FAX: (706) 542-0565
Homepage URL: *www.uga.edu/~army/*
Email: goldbar@arotc.uga.edu

The Army ROTC program at the University of Georgia has been commissioning officers in Athens for more than seventy years. It is a long, proud tradition which we are continuing. Currently, more than 150 students are enrolled in Army ROTC at the University.

Army ROTC provides college men and women an opportunity to receive training in basic military skills. Through study and application of the principles of leadership and management, the Army ROTC student develops self-discipline, self-confidence, and leadership skills that will contribute to success in any career.

The Army has a career field to match a student's education and interests with no restrictions on the major field of study or discipline. Army ROTC classes are unique in the college curriculum in offering both instruction and the opportunity to develop leadership. The student who takes Army ROTC may enter after graduation such diverse fields as aviation, engineering, law enforcement, medical services, combat command, communications, finance, management, personnel administration, transportation, and research and development.

BASIC COURSE

The Basic Course is taken during the freshman and sophomore years. The courses cover military skills. There is no military commitment for taking a Basic Course class. The Basic Course of four semesters' duration consists of two hours of classroom work and two hours of leadership laboratory per week. Classes are taken in conjunction with the standard classes a student schedules each semester. The leadership laboratories are often conducted outdoors and may include field trips. In the classroom the student acquires knowledge of basic military skills, military organization, weapons, tactics, history and customs, first aid, foreign doctrines, and basic management techniques. In the field, leadership skills are progressively developed through experience and exposure to leadership situations. Equally important, these courses have the objective of developing the student's leadership, self-discipline, integrity, and sense of responsibility.

ADVANCED COURSE

The Advanced Course consists of three classroom hours and two leadership laboratory hours per week during both the third and the fourth years. The course work during the Advanced Course emphasizes techniques of management and leadership and the fundamentals and dynamics of the military team. The leadership laboratory provides the student with applied leadership experience. The general objective of this course of instruction is to produce junior officers who by education, training, attitude, and inherent qualities are suitable for continued development as officers in the Army. There are four avenues available for the student to become eligible for entry into the advanced program and obtain a commission as a second lieutenant:

(a) satisfactory completion of, or placement credit for, the basic program at the University of Georgia or at any other school, college, or university offering basic ROTC and meeting the entrance and retention requirements established by the Army.

(b) be an active duty veteran or junior ROTC cadet graduate eligible for placement credit.

(c) satisfactory completion of the five-week ROTC "Camp Challenge" at Fort Knox, Kentucky, during the summer following the sophomore year. (See Two-Year Program.)

(d) completion of Basic/Advanced Individual Training with the National Guard or U.S. Army Reserve.

Advanced Course graduates are commissioned as second lieutenants and serve in the Active Army, the Army Reserve or the National Guard. Graduates may be granted a delay in reporting for active duty to pursue graduate studies. Each year one-third of our graduates are designated as distinguished military graduates and are eligible for Immediate Active Duty Commissions. A few of these distinguished graduates are awarded fellowships that allow these officers to attend graduate school while receiving full pay and allowances as officers.

PROFESSIONAL MILITARY EDUCATION COMPONENT

The professional military education component consists of two essential parts—a baccalaureate degree and successful completion of one of the undergraduate courses from each of the three designated fields of study listed below.

1. Written Communication Skills
   a. Requirement: Develop the ability to communicate effectively in writing.
   b. Recommended courses: ENGL 1101 and 1102, English Composition, are required for all undergraduate degrees at the University of Georgia.
2. Military History
   a. Requirement: Become acquainted with the evolution of warfare, military theory, and the military profession, with particular emphasis on the place of military institutions in society, to develop a sense of military history.
   b. Recommended courses: HIST 3020, United States Foreign Relations since 1914; HIST 3751, War and Society to 1600; HIST 3752, War and Society Since 1500; HIST 4072, The Civil War Period of American History; HIST 4092, The United States in the Era of the Cold War; HIST 4220, The United States and Latin America; HIST 4391, The French Revolution and the First Empire; HIST 4400, The Age of World Wars I and II; HIST 4700, Themes in Comparative History; and HIST 4990, Senior Seminar in History.
3. Computer Literacy
   a. Requirement: Become familiar with personal computer terminology, hardware, and application software to include word processing and the MSDOS system.
   b. Recommended courses: CSCI 1100-1100L, Introduction to Personal Computing; MIST 2090, Introduction to Information Systems in Business.

Any deviation from the above requirements must be approved after counsel with the Professor of Military Science.

MINOR IN MILITARY SCIENCE

Contact the department for requirements or refer to the Bulletin Web site at www.bulletin.uga.edu.

ADVANCED PLACEMENT

Veterans entering the military science program may receive credit for the first two years of ROTC. Students who have completed military science courses in military preparatory schools or junior colleges may also be given appropriate credit.

FINANCIAL ASSISTANCE

All cadets in the advanced program earn approximately $1500 per year in nontaxable allowances. Non-scholarship cadets can earn as much as $16,500 during their four years of college by being in both the Georgia National Guard or the United States Army Reserve and Army ROTC Simultaneous Membership Program (SMP).

SCHOLARSHIPS

Three-year and two-year Army ROTC scholarships are awarded on a competitive basis. More than 50% of our advanced course students are on scholarship. Freshmen apply for three-year scholarships and sophomores apply for two-year scholarships in January each year. Individuals interested in applying for a scholarship should contact the Professor of Military Science at the University of Georgia. Four-year scholarships are available to high school seniors.

TWO-YEAR PROGRAM

Transfer Students

Students transferring to the University with two years of college remaining, but who have not completed all basic course requirements, can still participate in the advanced course. These students must attend a five-week summer camp prior to entering the advanced program. Students attend camp at Fort Knox, Kentucky, and are paid approximately $700, provided free room and board and a travel allowance to and from camp. Students who intend to enroll in the two-year program should contact the Professor of Military Science by February of their sophomore year.

PROFESSIONAL ACTIVITIES

There are two extracurricular organizations that supplement instruction offered in the classroom. Pershing Rifles Company and Ranger Company improve the student's military skills and offer additional leadership opportunities. There is also the Color Guard, and the Scabbard and Blade Honor Society.

FIELD TRIPS

The battalion conducts one weekend field trip each semester. Previous weekend activities have included mountaineering, weapons qualification, tactics, and land navigation.

ARMY SPECIALTY TRAINING

Selected students attend the United States Army Airborne, Air Assault, and Northern Warfare schools during the summer on a voluntary basis.

CAREER OPPORTUNITIES

Our graduates earn approximately $30,000 a year to start. This amount rises to approximately $50,000 after four years of active duty.

ARMY ROTC UNIFORMS, BOOKS AND SUPPLIES

Students enrolling in the Army ROTC program will be issued all books, uniforms, and materials needed in their ROTC classes. Scholarship students, advanced course students, and extracurricular activity members are issued additional uniforms. Others are issued uniforms and equipment as needed.

FURTHER INFORMATION

For further information, contact the Professor of Military Science by calling (706) 542-2612 or by visiting the Military Building on campus at the corner of Baldwin and Sanford Streets.

Courses of Instruction

See page 305. Courses offered through the Department of Military Science are listed under the prefix MILS.

Programs of Study

The University of Georgia Core Curriculum

The core curriculum was established within the University System of Georgia as a means of facilitating the transfer of credit for students at the lower division level as they work toward baccalaureate degrees within University System colleges and universities. The various institutions within the University System, in establishing their core curricula, provide for (1) 60 semester credit hours of which a minimum of 42 are in general education and 18 in major-related courses; (2) assurances that all courses satisfactorily completed in the core curriculum of any unit of the University System will be acceptable and transferable to other units of the University System; and (3) the preservation of the maximum possible amount of institutional autonomy.

Note: Honors equivalents for the courses listed below will satisfy Core requirements.

AREA A—ESSENTIAL SKILLS—9 HOURS

Area A is satisfied by students completing nine hours from the following list. Students must take ENGL 1101 and ENGL 1102 and will select a three-hour math course in consultation with an academic advisor.

ENGL 1101
ENGL 1102
MATH 1101
MATH 1113
MATH 2200
MATH 2200L

AREA B—INSTITUTIONAL OPTIONS—4 to 5 HOURS

This area will be satisfied by electives selected by the student with approval of an academic advisor.

AREA C—HUMANITIES/FINE ARTS—6 HOURS

Area C is satisfied by completing two of the following courses. Students may select one course from the Fine Arts list below and one from the Humanities list, or students may select two courses from different departments in the Humanities list.

Fine Arts Electives

ARHI 2100
ARTS 2000
ARTS 2050
DANC 2010
DRAM 2000
DRAM 2120
DRAM 2130
MUSI 2020
MUSI 2040
MUSI 2060
MUSI 2080

Humanities Electives

CLAS 1000
CLAS 1010
CLAS 1020
CLAS(LING) 2010
CMLT 2111
CMLT 2210
CMLT 2212
CMLT 2220
CMLT 2400
EDES 2510
EDES 2520
ENGL 2310
ENGL 2320
ENGL 2330
ENGL 2340
ENGL 2400
ITAL 2500
LING 2100
PHIL 1000
PHIL 1500
PHIL 2200
PHIL 2400
RELI 1001
RELI 1002
RELI 1003
RELI 2004
RELI(AFAM) 2005
ROML 2550
RUSS 2050
SPCM 1100
SPCM 1500
Foreign language courses

AREA D—SCIENCE, MATHEMATICS AND TECHNOLOGY—10 to 11 HOURS

Area D for Non-Science Majors (including Sociology and Psychology)— 10 to 11 hours

a. Select one course from the four-hour science course list and one course from the three-hour science course list or select two courses from the four-hour science course list.
b. Select one course from the mathematics, science, or technology course list.

Area D for Science Majors—11 hours

a. Select two courses from the four-hour science course list below.
b. Select one course from the mathematics, science or technology course list.

Area D: four-hour science courses with laboratory

ASTR 1010
ASTR 1010L
ASTR 1020
ASTR 1020L
BIOL 1103
BIOL 1103L
BIOL 1104
BIOL 1104L
BIOL 1107-1107L
BIOL 1108-1108L
BTNY 1210
BTNY 1210L
BTNY 1220
BTNY 1220L
CHEM 1110
CHEM 1110L
CHEM 1211
CHEM 1211L
CHEM 1212
CHEM 1212L
CHEM 1411
CHEM 1411L
CHEM 1412
CHEM 1412L
CHEM 2100
CHEM 2100L
CHEM 2211
CHEM 2211L
CHEM 2212
CHEM 2212L
CSCI 1301-1301L
ECOL 1000-1000L
GEOG 1111
GEOG 1111L
GEOG 1112
GEOG 1112L
GEOG 1113
GEOG 1113L
GEOL 1121
GEOL 1121L
GEOL 1122
GEOL 1122L
GEOL 1250-1250L
GEOL 1260-1260L
MARS 1010-1010L
MARS 1020-1020L
PHYS 1111-1111L
PHYS 1112-1112L
PHYS 1211-1211L
PHYS 1212-1212L

Area D: three-hour science courses with or without laboratory—some of the following three-hour laboratory science courses have optional laboratories—see Area D four-hour course with laboratory list

ASTR 1010
ASTR 1020
ASTR 1420
ASTR 1660
ASTR 1870
BIOL 1103
BIOL 1104
BTNY 1210
BTNY 1220
GEOG 1111
GEOG 1112
GEOL 1113
GEOL 1125
GEOL 1121
GEOL 1122
PHYS 1010

Area D: three- or four-hour mathematics, science, or technology courses

BIOL 1108-1108L
BTNY 1220
BTNY 1220L
CHEM 1212
CHEM 1212L
CSCI 1100-1100L
CSCI 1210
CSCI 1301-1301L
MATH 1060
MATH 1113
MATH 2200
MATH 2200L
MATH 2210
MATH 2210L
PHIL 2500
PHYS 1111-1111L
PHYS 1112-1112L
STAT 2000
STAT 2210

AREA E—SOCIAL SCIENCES—12 HOURS

Students will select four courses from at least two departments from the list below. (Students who have not met the Georgia and U.S. Constitution requirement by examination should enroll in Political Science 1101.)

AAEC 2580
AFAM 2000
ANTH 1102
ANTH 2310
CLAS(ANTH) 2000
ECON 2100
ECON 2105
ECON 2106
ECON 2200
EDES 1500
GEOG 1101
GEOG 1103
GEOG 1125
HIST 2051
HIST(AFST) 2052
HIST 2111
HIST 2112
HIST 2221
HIST 2222
HIST 2301
HIST 2302
HIST(AFST) 2501
HIST 2502
HIST 2560
HIST 2601
HIST 2602
HIST 2701
HIST 2702
POLS 1101
PSYC 1101
PSYC 2100
SOCI 1100
SOCI 1600
SOCI(AFAM) 2020
SOCI (AFAM) 2820
SPCM 1010
WMST 1110-1110D
WMST 2010

AREA F—COURSES RELATED TO THE PROGRAM OF STUDY—18 HOURS

Lower-division courses related to the discipline of the program of study and courses which are prerequisite to major courses at higher levels. See Programs of Study for specific course requirements.

Majors and Degrees

Degree requirements for undergraduate majors are updated each semester and appear in the official Bulletin for the University which can be found on the Web at *www.bulletin.uga.edu*. A CD-Rom version of the online Bulletin may be ordered from the Web site or by calling the Office of Curriculum Systems, (706) 542-6358.

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Accounting

Degree
Bachelor of Business Administration (B.B.A.)

Contact Person
Patricia G. Hoyt
Program Coordinator
phoyt@cba.uga.edu
(706) 542-1616

Department
J. M. Tull School of Accounting
Terry College of Business

Description of the Program

The major in accounting is designed to give the student an understanding of the theory of accounting as it is used in our society. All accounting majors must take 24 hours of required courses. ACCT 5710 and 5720 are allowed to count for the B.B.A.'s "Business Course Outside the Major" in the General Elective Requirements.

Career Opportunities

Students in this major are prepared for accounting careers in private, public, or governmental organizations. Accounting education also provides an excellent background for non-business professions such as law, and is a sound basis for advancement to top-level management positions.

Entrance Requirements

Students intending to pursue this major must meet the following requirements: completion of 60 semester hours, completion of Core Areas A-E, completion of Area F for the B.B.A. degree, and achievement of an overall GPA of 2.6. Students may not enroll in the Terry College of Business while on academic probation or dismissal from another college.

Expectations of Transfer Students and Students in this Major

- Students should expect to commit to a minimum of four semesters to complete the required courses when they begin the major-level accounting courses.
- Accounting majors may transfer only one major-level accounting course into the program. Transfer credit is typically allowed for the equivalent of either ACCT 5200, Audit I, or ACCT 5400, Tax I. Check with the School of Accounting for any changes to this policy.
- Students are expected to have completed the equivalent of ACCT 2101, Accounting Principles I, within one year before enrolling in ACCT 5000, Intermediate Accounting I. Longer intervals may require a review or "audit" of the Accounting Principles material.
- Students are encouraged to participate in Beta Alpha Psi, the national honorary accounting fraternity.
- All accounting majors should prepare for their job search during the spring and summer before their senior year. Recruiting activities are highlighted with an Accounting Career Day held before fall semester.Details are discussed in ACCT 5710 and 5720, Professional Accounting I and II.

Special Requirements

In addition to the UGA residence policy, B.B.A. students must complete at least 30 semester hours as students in the Terry College. Students are also expected to complete all major courses in residence.

Grades of 2.0 in the following are required for B.B.A. degree certification: ENGL 1101 and 1102 combined, major courses, business cumulative GPA, and the UGA cumulative GPA.

No accounting student is permitted to repeat a major accounting course more than once in order to achieve a grade of C or better, nor is an accounting student permitted to repeat more than two major accounting courses.

Any individual wishing to work in public accounting will be required to take the Certified Public Accountant Examination (CPA Exam). This national exam is given twice each year, in May and in November. A candidate for the CPA exam in Georgia must complete a minimum of 150 semester hours of courses which includes a four-year degree, 30 semester hours of accounting courses beyond the principles courses, and 24 semester hours of business subjects.

This ruling requires accounting students to complete an additional year of education. We believe that a student who is going to stay for a fifth year should earn the master's degree along the way. We encourage our students to apply to either the Master of Accountancy (MAcc) or the Five-Year Program (B.B.A./MAcc). Both approaches require one additional year of study beyond the undergraduate degree and, in either case, the student is awarded the MAcc degree upon completing the program. Because a senior in the Five-Year Program has the standing of a graduate student, financial aid in the form of graduate assistantships may be available. The course requirements are virtually the same in the MAcc and Five-Year Program. However, Five-Year students are able to "mix and match" their last two years of courses to complete their degree requirements.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)	
Preferred courses in Area D: MATH 1113 or 2200, 2200L (take under general electives if not taken in Area D)	
Preferred courses in Area E: ECON 2100 or 2200 (take under general electives if not taken in Area E)	
Area F:	18
ACCT 2101, 2102; ECON 2105, 2106; LEGL 2700; MIST 2090	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships, Internships, Cooperative Education

Scholarships are awarded at the annual Accounting Awards Ceremony, held each spring. These awards are sponsored by various public accounting firms, industry, the Georgia Society of CPAs, and CPA review programs. Students must have completed at least their junior year to be eligible for these awards.

Internships are an integral part of the program; however, they are not required and are not guaranteed to a student. Details are made available to students through the ACCT 5710 and ACCT 5720 courses.

Cooperatives are handled through the University's Career Planning and Placement Office's Co-op Division. Call (706) 542-8421 for details.

Advertising

Degree
Bachelor of Arts in Journalism (A.B.J.)

Contact Person
Dean M. Krugman
Department Head
dkrugman@arches.uga.edu
(706) 542-4791

Department
Advertising and Public Relations
College of Journalism and Mass Communication

Description of the Program

This program is designed to train students as analysts, creative thinkers and planners in advertising and related fields.

Career Opportunities

Career opportunities include entry-level positions in advertising, marketing communication, promotion and other forms of mediated persuasion.

Entrance Requirements

Applications are accepted only from students who have met minimum requirements in number of credit hours (at least 60 semester hours and satisfactory completion of Areas A-F of the Core Curriculum which includes foreign language at the second and third levels and micro or macro economics), cumulative and overall grade point averages of at least 2.5, and English proficiency (recentered SATV score of at least 650, ACTV score of at least 30 or at least 77 on an English proficiency test administered by UGA's Testing Center). Meeting *minimum* requirements assures consideration but is not a guarantee of admission.

A point system based on academic achievement and test scores determines a student's standing among other applicants. Those presenting the highest qualifications are accepted each semester of the academic year.

Expectations of Transfer Students

The academic program for the A.B.J. degree consists of two parts: Areas A-F of the core curriculum (which includes foreign language at the second and third levels and micro or macro economics) taken during the freshman and sophomore years at UGA or another institution and the professional program taken after formal admission to the Grady College. Pre-Journalism students at the University of Georgia are enrolled in the Franklin College of Arts and Sciences.

Admission to the University of Georgia is not a guarantee of admission to the Grady College of Journalism and Mass Communication. A maximum number of spaces in each major is determined by the availability of teaching staff, classroom space, lab facilities and other resources. In reaching its decisions on how many students may be admitted each semester, the Admissions Committee is governed by the number already enrolled in each major, the number expected to graduate and the number applying. Grade point averages and test scores are the primary measures upon which admission decisions are based. It is recognized that the inclusion of talented students of diverse international and racial backgrounds is an indispensable part of the educational process and the Committee considers the need for such diversity in reaching its decisions.

Applications must be submitted directly to the Office of Undergraduate Services, Room 201, College of Journalism and Mass Communication.

The deadline is 4:00 p.m. on Friday of the second full week of classes.

Special Requirements

No more than two courses or seven semester credit hours in journalism and mass communication courses earned before admission to the Grady College, whether at UGA or another institution, may apply toward satisfaction of requirements for the A.B.J. degree. At least 20 semester credit hours of journalism and mass communication courses which satisfy A.B.J. degree credit must be earned at the University of Georgia.

A total of 121 semester hours (includes one hour of PE) must be successfully completed to earn the A.B.J. degree. At least 90 semester hours must be taken outside the college, of which at least 65 must be in liberal arts and sciences courses. No more than 30 semester credit hours in journalism and mass communication courses may be applied toward requirements for the Advertising major.

A grade of C or higher must be earned in any journalism and mass communication course which counts toward satisfaction of requirements for the A.B.J. degree.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: One literature course from CLAS, CMLT, ENGL	
Preferred course in Area D: STAT 2000	
Preferred courses in Area E: ANTH 1102 or GEOG 1125	
Area F:	18
Foreign language sequence through the third semester	
ECON 2105 or 2106	
Choose 9 hours of 1000/2000-level courses from ANTH, ARTS, CLAS, CMLT, DRAM, ENGL, GEOG, HIST, PHIL, POLS, PSYC, RELI, SOCI, SPCM, STAT	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Some courses may require the purchase of a supply card from the University bookstore.

Scholarships

About 30 undergraduate scholarships are administered by the Grady College each academic year. A general application submitted during the spring semester assures consideration for any of the scholarships for which the applicant is qualified.

Application forms may be obtained in the Office of Undergraduate Services, Room 201, Grady College of Journalism and Mass Communication.

Internships

Valuable practical experience is gained by serving internships. Although not required, internships are considered essential to a student's total educational experience and greatly enhance job opportunities upon graduation. Academic credit may be earned for successful completion of an internship if:

1. Advance approval is received from the student's department. A written request must be submitted and must include a job description, length of internship, name of supervisor and rate of pay. Also, a letter verifying the internship offer must be submitted by the employer prior to the first day of the semester in which the internship is served.
2. Certain basic courses as determined by the department have been completed.
3. The internship covers a minimum number of weeks of full-time employment as determined by the department.
4. During the semester of the internship the student registers concurrently for ADPR 5010, which is included in the maximum semester hours of journalism and mass communication credit that may be earned toward the Advertising major.
5. A written report is submitted by the employer prior to the last day of the semester in which the internship is served describing the intern's duties and the quality of performance.
6. A final, written report of week-by-week activities is submitted by the student to the department prior to the last day of the semester in which the internship is served.

African American Studies

Degree
Bachelor of Arts (A.B.)

Contact Person
R. Baxter Miller
(706) 542-5197

Department
African American Studies Program

Description of the Program

For general information about this major, contact the African American Studies Program at (706)

542-5197 or refer to the online bulletin at www.bulletin.uga.edu.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
Required courses in Area A: ENGL 1101, ENGL 1102, and MATH 1101	
Area F:	18
AFAM 2000 (if not taken in Area E)	
Foreign language (through third semester)	
Electives	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Agribusiness

Degree

Bachelor of Science in Agriculture (B.S.A.)

Contact Person

Steven C. Turner
Associate Professor and Undergraduate Coordinator
sturner@agecon.uga.edu
(706) 542-0852

Department

Agricultural and Applied Economics
College of Agricultural and Environmental Sciences

Description of the Program

The agribusiness major prepares students for professional careers in agribusiness marketing, management, and finance. Agribusinesses process and market food and fiber products, supply inputs to agricultural production, and manage agricultural production. Agribusiness majors learn economic principles and strategies for agribusiness marketing and management. Students take courses in agribusiness management, marketing, accounting, economic theory, communications, mathematics, computers, and agriculture. Students learn decision-making skills for agribusiness management, finance, marketing, sales, processing, manufacturing, transportation, and international trade. The agribusiness degree provides career flexibility for students planning to work in private industry or government.

Career Opportunities

The agribusiness program is designed to place students in businesses supplying inputs to agricultural production, processing and transportation, in businesses engaged in food and fiber marketing, and in agencies that service and regulate agribusiness industries. Agribusiness majors also develop skills to manage their own businesses. Agribusiness accounts for 22 percent of the nation's total economic activity. The University of Georgia's agribusiness program plays a major role in meeting the agribusiness education needs of the state, region, and nation.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)	
Preferred courses in Area D: CHEM 1211,1211L, BIOL 1107-1107L or BTNY 1210, 1210L, MATH 2200, 2200L (take under general electives if not taken in Area D)	
Area F:	18
AAEC 2020-2020L or CSCI 1100-1100L; AAEC 2580 or ECON 2106; ACCT 2101; ECON 2105; STAT 2000; MATH 2110 or 2210, 2210L	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Several scholarships are available to agribusiness majors through the College of Agricultural and Environmental Sciences and the Agricultural and Applied Economics Department. Information about these scholarships can be obtained from Steven Turner (sturner@agecon.uga.edu).

Internships

An internship is required for students pursuing the agribusiness major. Dr Forrest Stegelin (fstegelin @agecon.uga.edu) coordinates the internship program for the agribusiness major.

Minor in Agribusiness

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Agricultural Communications

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Christine Langone
Associate Professor and Program Coordinator
clangone@arches.uga.edu
(706) 542-0715

Department
Agricultural Leadership, Education, and Communication
College of Agricultural and Environmental Sciences

Description of the Program

The agricultural communications major prepares students to report agricultural information to audiences such as consumers, legislators, homeowners, farmers, agribusinesses, commodity groups, and governmental agencies. Through positions in fields such as public relations, sales, marketing, journalism, photography, and media, students communicate about the importance of agriculture. Students take courses in agriculture and environmental science along with journalism courses in the College of Journalism and Mass Communication. Each student concentrates in one aspect of communication selecting from journalism, public relations, advertising, or telecommunication courses. In addition, journalism electives allow students to develop a broad range of skills and to develop an individualized program of study. Agriculture classes may be taken in one area or selected from numerous departments in the college. Many students complete a minor in an agricultural discipline.

Career Opportunities

People with communication skills who also understand scientific agriculture have numerous opportunities. Every land-grant university employs a staff of journalists to communicate its research, extension, and teaching programs. Several branches of the federal government—USDA, Department of State, Department of the Interior—employ agricultural journalists, as do similar departments in state governments. There are several hundred agriculture-related publications in the United States. Agribusinesses, chemical and machinery companies, advertising agencies, and agriculture associations employ people who are trained in writing, advertising, broadcasting, and public relations.

Entrance Requirements and Expectations of Transfer Students

Students must have completed Core Areas A-E and Area F and must have a minimum 2.5 overall GPA.

Special Requirements

A grade of C or higher is required in journalism and agricultural courses which apply to major-related requirements.

Program Requirements

Semester Core Curricululm	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: (CHEM 1211, 1211L) and (BIOL 1107-1107L or BTNY 1210, 1210L) and (MATH 2200, 2200L)	
Area F:	18
AAEC 2580 or ECON 2106; GEOG 1125; SOCI 1101 or 1600; SPCM 1100; two courses from ANTH 1102; CSCI 1100-1100L; GEOG 1103; MATH 1060; PHIL 2200; PSYC (AFAM) 2150; SOCI 1101, 2090, 2420, 2730; SPCM 1800; STAT 2000	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Several scholarships are available to majors in the College of Agricultural and Environmental Sciences. For more information, contact the Office of Academic Affairs in the College.

Internships

Students are encouraged, but not required, to complete an internship.

Agricultural Economics

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Steven C. Turner
Associate Professor and Undergraduate Coordinator
sturner@agecon.uga.edu
(706) 542-0852

Department
Agricultural and Applied Economics
College of Agricultural and Environmental Sciences

Description of the Program

Agricultural economics applies economic principles to food and fiber production, natural resource management, community and regional economic development, environmental policy, and international trade. Students take courses in economic theory, econometrics, statistics, accounting, technical agriculture, and the physical and biological sciences. A flexible offering of electives allows students to tailor the agricultural economics major to meet their particular interests and career objectives. Agricultural economics provides a strong theoretical background for those entering graduate schools in agricultural economics, economics, and professional schools in law and business administration.

Career Opportunities

Agricultural economics prepares students for careers in applied economics, resource management, public program analysis, economic forecasting, and economic research. Agricultural economics graduates are now working in commercial agriculture, food and fiber industries, resource and environmental management agencies, economic development agencies, state and local governments, and international trade organizations. Position responsibilities include resource management, finance, administration, economic research, and policy analysis with private, non-profit, and public agencies at the state and federal levels. Job opportunities are expanding for graduates with skills in applied economics.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Program Requirements

Semester Core Curriculum	Hours
Area A-E:	42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1113

Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)

Preferred courses in Area D: CHEM 1211, 1211L, BIOL 1107-1107L or BTNY 1210, 1210L and MATH 2200, 2200L (take under general electives if not taken in Area D)

Area F:	18

AAEC 2020-2020L or CSCI 1100-1100L; ACCT 2101; AAEC 2580 or ECON 2106; ECON 2105; STAT 2000; MATH 2110 or 2210, 2210L

Major Requirements	60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required	**120**

Scholarships

Several scholarships are available to agricultural economics majors through the College of Agricultural and Environmental Sciences and the Agricultural and Applied Economics Department. Information about departmental scholarships can be obtained from Steven Turner (sturner@agecon.uga.edu).

Internships

Internships are available, but not required, for students pursuing the agricultural economics major.

Minor in Agricultural Economics

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Agricultural Education

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Persons
Maynard J. Iverson
Associate Professor and Program Coordinator
miverson@arches.uga.edu
(706) 542-1204

Ray V. Herren
Associate Professor
rherren@arches.uga.edu
(706) 542-3898

Department
Agricultural Leadership, Education, and Communication
College of Agricultural and Environmental Sciences

Description of the Program

Students in Agricultural Education complete an approved program of course work in the agricultural sciences and teacher education. A one credit school practicum involves observation of agricultural instruction at schools across the state. The practicum helps students understand the job of teaching agriculture, make career choices and select a student teaching center. Apprentice teaching (student teaching) is carried out in an approved secondary school center under the daily supervision of an experienced, successful teacher of agriculture. Supervision is also provided by University of Georgia Agricultural Education faculty.

Career Opportunities

Agricultural Education prepares students for positions in teaching agriculture at the middle school, high school, post-secondary and adult levels. Graduates are eligible for teacher certification in most states, under reciprocity agreements with the State of Georgia. Employment outlook is excellent; there is a national shortage of teachers of agriculture. For the past decade, Georgia has had two to three job openings for every graduate of the program. Graduates are also eligible for a variety of related jobs in agricultural business, industry, extension, and other government agencies.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F. Courses offered in the College of Education require admission to teacher education and a 2.5 UGA GPA.

Expectations of Transfer Students

Students are required to have enrolled in the first course in the professional sequence, EAGR 4340/6340, and be admitted to teacher education prior to continuation in the professional sequence (See Regents' requirements for admission to teacher education in College of Education section).

Special Requirements

Students are expected to enroll in EAGR 4010/6010, Leadership Seminar, each semester that they are on campus. A passing grade on the Agricultural Education version National Praxis exam, General version (Praxis I), and the Praxis II (for technical competence) is also required for certification. Students who score well on the SAT or GRE may exempt Praxis I.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: (BIOL 1107-1107L or BTNY 1210, 1210L) and (CHEM 1211, 1211L)	
Area F:	18
EFND 2030; EPSY 2020; PHYS 1010; choose 9 hours from AAEC 2580; ADSC 2000-2000L, 2010; AESC 1010; BIOL 1108-1108L or BTNY 1220, 1220L; CHEM 1212, 1212L; CRSS 2010-2010L; CSCI 1100-1100L; EDIT 2010; HORT 2000; POUL 2020-2020L	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Several scholarships are available to majors in the College of Agricultural and Environmental Sciences. For more information, contact the office of Academic Affairs in the College. Other scholarships are available through the National FFA Foundation.

Agricultural Engineering

Degree

Bachelor of Science in Agricultural Engineering (B.S.A.E.)

Contact Person

E. Dale Threadgill, P.E.
Department Head
ugrad.prog@engr.uga.edu
(706) 542-1653
www.engr.uga.edu

Department

Biological and Agricultural Engineering
College of Agricultural and Environmental Sciences

Description of the Program

The Bachelor of Science in agricultural engineering (B.S.A.E.) curriculum at the University of Georgia is a comprehensive engineering program. This versatile engineering program combines the principles of mechanical, electrical, civil, and chemical engineering to prepare graduates for professional careers in a variety of industries. Activities in these careers may involve design of machinery and equipment (mechanical); structural and environmental design (civil); water and soil management (civil); processing, manufacturing, and quality measurement (mechanical, chemical, and electrical); and controls, energy use, microelectronics, and electrical power and machines (electrical).

This four-year professional engineering curriculum provides graduates with a general engineering degree that includes the basic sciences, humanities, social sciences, engineering sciences and courses in engineering design and analysis. All students complete courses in the basic engineering sciences such as statics, dynamics, strength of materials, fluid mechanics, electric circuits, heat transfer, and thermodynamics. They also select from intermediate engineering science and design courses in mechanism design, structural design, physical unit operations, management of structural environments, natural resource engineering, and electronics. Engineering design is introduced in the freshman year and a design methodology course is taught for sophomores. The capstone engineering design course is required in the senior year. In addition, courses with engineering science and design components are offered throughout the four-year curriculum.

Fifteen credit hours are selected by students during their junior and senior years to develop a desired *engineering emphasis* in one of the following areas: (1) Electrical and Electronic Systems, (2) Mechanical Systems, (3) Natural Resource Management, (4) Process Operations, or (5) Structural Systems. The development of both technical and communication skills is stressed throughout the program. The program establishes an interrelationship between the engineering profession and society.

The B.S.A.E. degree program is accredited by the Accrediting Board for Engineering Technology (ABET) and graduating seniors must complete the Fundamentals of Engineering examination prior to graduation. Successful completion of this exam qualifies the student for Engineer in Training registration which is a prerequisite for the Professional Engineer registration.

The objectives of the B.S.A.E. program are to provide graduates with:

1. Educational experiences using mathematics, natural sciences, engineering sciences and engineering design which motivate and qualify graduates to recognize and solve complex engineering problems.
2. Superb technical skills in the areas of computers, information transfer, and communication; innovative and imaginative attitudes; and an appreciation for the management function.
3. Learning experiences necessary for the synthesis of knowledge across disciplines in the social sciences, humanities, and natural sciences in order to understand the ethical, environmental, and social impacts of decisions.
4. An appreciation for continued professional development throughout life-long learning.

Course work in the B.S.A.E. program is selected to assure that graduates develop the desired competencies in a wide range of engineering topics. The engineering design experience is integrated throughout the B.S.A.E. curriculum. All students are required to take a first-year course in Introduction to Engineering Design, a second-year course in Engineering Design Methodology, and a fourth-year capstone course in Engineering Design. The capstone course draws upon previous course work and includes a major engineering design team project which focuses on professional practice in the student's area of emphasis. The engineering design experience is structured to fulfill the above objectives.

Career Opportunities

The comprehensive engineering nature of the B.S.A.E. program enables graduates to take advantage of employment opportunities related to agricultural, civil, mechanical, electrical, and food and process engineering. The versatility of this degree program provides a broad spectrum of career alternatives in engineering design, development, testing, process control, and management. Typical employers of graduates are involved in food processing (e.g., General Foods, Gold Kist, Proctor & Gamble); electrical, electronics, and communications (e.g., Southern Bell, General Electric, Logic Technologies, Reliance); environmental engineering (e.g., CH^{2}M Hill, USGS, EPA); mechanical equipment (e.g., Carrier Transicold, John Deere, FMC); utilities (e.g., Georgia Power Co., Jackson EMC, Duke Power Co.); paper production (e.g., Georgia Pacific, Weyerhauser); structural, construction, and consultants (e.g., Golder and Associates, Haliburton, Trus-Joist-MacMillan)); textiles (e.g., Milliken Industries); and federal, city, and state agencies (e.g., Federal Aviation Administration, Warner Robins Air Logistics Center, USDA-NRCS).

Certificate Programs

Undergraduate Certificate Programs in Computer Systems Engineering and Engineering Physics are available to B.S.A.E. students. These certificates are jointly offered by the Department of Computer Science and the Department of Physics and Astronomy.

Entrance Requirements

Entrance requirements for this major include completion of Core Areas A-E and Area F; a grade of C or better and a 2.5 GPA for the following courses: MATH 2200, 2200L, 2210, 2210L, 2500, 2700, PHYS 1211-1211L, 1212-1212L, CHEM 1211, 1211L, 1212, 1212L, BIOL 1107-1107L; and an overall GPA of 2.5.

Special Requirements

All students must earn a grade of C or better in all required mathematics and physics courses and ENGR 1120, 2110, 2120, 2130, 2140, 2170, 3140, 3150, and 3160. Competency in a computer programming language is expected.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 2200, 2200L	
Preferred courses in Area C: SPCM 1100 and one course from CMLT 2210, 2220, 2400; ENGL 2310, 2320, 2330, 2340, 2400 (take under general electives if not taken in Area C)	
Preferred courses in Area D: BIOL 1107-1107L and CHEM 1211, 1211L and MATH 2210, 2210L (take under general electives if not taken in Area D)	
Area F:	18
CHEM 1212, 1212L; MATH 2500, 2700; PHYS 1211-1211L, 1212-1212L	
Major Requirements	70
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**130**

Scholarships

The following scholarships are available for B.S.A.E. majors in the Biological and Agricultural Engineering Department: Bruce E. Dixson Scholarship; Bertram S. Reid Scholarships; Georgia Power Freshman Scholarship; Georgia Section ASAE Scholarship; Rudie Driftmier Scholarship; Goodloe Yancey Scholarships; B. Derrell McLendon Scholarship; Robert H. Brown Scholarship. In addition, many scholarships are available at the College and University levels.

Cooperative Education

The Biological and Agricultural Engineering Department offers its students an opportunity to integrate academic instruction and real-life applications through a cooperative plan of education. Usually beginning after the freshman year, the plan allows for alternating semesters of full-time, off-campus professional work experience in designated industries, agencies, and laboratories arranged by the Department. The student is considered by the University to be in an uninterrupted program of study since the student is enrolled for academic credit while on work-experience semesters. While co-op placement does not imply permanent employment of the student upon graduation, it does provide an extended period for mutual evaluation by the student and the cooperating industry, enhancing the possibility of permanent employment.

Animal Health

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Mark M. Compton
Associate Professor and Undergraduate Coordinator
mcompton@arches.uga.edu
(706) 542-1359

Department
Poultry Science
College of Agricultural and Environmental Sciences

Description of the Program

The degree program, the Bachelor of Science in Agriculture with a major in animal health, was begun in 1988. This program was designed, in close cooperation with the College of Veterinary Medicine, specifically for students entering veterinary school after three years of pre-veterinary study in the College of Agricultural and Environmental Sciences.

Students who enter the College of Veterinary Medicine upon completion of the degree requirements are eligible to receive the B.S.A. degree with a major in animal health only after successfully completing the first year of study in the College of Veterinary Medicine. Alternatively, students may also use the senior year to complete requirements for a B.S.A. degree in an appropriate major in the College of Agricultural and Environmental Sciences. See section on pre-veterinary medicine programs.

Career Opportunities

This program is designed for students who wish to study veterinary medicine.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F and a minimum GPA of 2.7.

Expectations of Transfer Students

Transfer students with 40 or more credit hours must have a 2.7 overall grade point average for admission.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred course in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)	
Preferred courses in Area D: BIOL 1107-1107L and CHEM 1211, 1211L	

Preferred courses in Area E: AAEC 2580 and ANTH 1102 (take under general electives if not take in Area E)

Area F: 18

ADSC 2010, 2010L; BIOL 1108-1108L; CHEM 1212-1212L; PHYS 1111-1111L; POUL 2020-2020L

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships

Several scholarships are available to students in the College of Agricultural and Environmental Sciences. For more information, contact the Office of Academic Affairs in the College.

Internships

Internships are available but not required.

Animal Science

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Henry E. Amos
Professor and Undergraduate Coordinator
hamos@arches.uga.edu
(706) 542-1852

Department
Animal and Dairy Science
College of Agricultural and Environmental Sciences

Description of the Program

The animal science curriculum is designed to provide technical and applied instruction in the biological, physical, and economic aspects of beef, swine, sheep, and horse production. It includes the selection, breeding, nutrition, reproduction, growth, and management of livestock in the production of meat and milk, or of horses as work or companion animals. Courses of a more basic nature may be emphasized by students who desire careers in science-related fields or who wish to pursue graduate or professional study. This major is highly recommended for persons wishing to enter a program of study in veterinary medicine.

Career Opportunities

The curriculum in animal science is designed to prepare students for careers as livestock producers, farm managers, animal science specialists, county extension agents, vocational agriculture teachers, or research technicians. Students are also qualified for careers in agribusiness with meat processing companies, feed manufacturers, breed associations, animal health companies, livestock marketing organizations, livestock equipment and supply companies, livestock publications, or related fields.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students transferring to this major should have taken the following courses: BIOL 1107-1107L, 1108-1108L; CHEM 1211, 1211L, 1212, 1212L; Organic Chemistry; MATH 1113.

Special Requirements

Students must have an overall 2.0 GPA in major courses.

Program Requirements

Semester Core Curriculum **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1113

Preferred course in Area C: SPCM 1100 (take under general electives if not taken in Area C)

Preferred courses in Area D: BIOL 1107-1107L, CHEM 1211, 1211L, and either CSCI 1100-1100L, MATH 2200, 2200L, or PHYS 1111-1111L or STAT 2000

Area F: 18

ADSC 2000-2000L, 2010, 2010L; BIOL 1108-1108L; CHEM 1212, 1212L; CHEM 2100, 2100L or 2211, 2211L

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships

Scholarships are available to Animal Science majors through both the College of Agricultural and Environmental Sciences and the Animal and Dairy Science Department.

Internships

All Animal Science majors are required to complete an internship as a part of the undergraduate program requirements.

Areas of Emphasis in Business and Industry, Industry Information, Meat Science, and Science/Pre-Veterinary

Contact the department for requirements.

Minor in Animal Science

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Anthropology

Degree
Bachelor of Arts (A.B.)

Contact Person
Michael D. Olien
Undergraduate Advisor
molien@arches.uga.edu
(706) 542-1478

Department
Anthropology
College of Arts and Sciences

Description of the Program

The program requires one course in each of the five core areas (cultural anthropology, archaeology, biological anthropology, applied anthropology and a culture area) and four additional three-semester-hour elective anthropology courses. Please note that courses cross-listed with other departments should be taken under the ANTH prefix.

Career Opportunities

Career opportunities are limited with only an A.B. degree, but include opportunities in contract archaeology, jobs that involve working with other cultures, and employment requiring general skills of social science.

Entrance Requirements

Students must have completed Core Areas A-E and Area F.

Expectations of Transfer Students

Six to nine semester credit hours of anthropology, beyond ANTH 1102, may be accepted.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
ANTH 1102	
Choose 15 hours from ECOL 1000-1000L, POLS 1101, STAT 2000, 2210, or any 1000 or 2000-level courses in GEOG, HIST, LING, PSYC, RELI, SOCI, and WMST	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Anthropology

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Art (B.F.A.)

Degree
Bachelor of Fine Arts (B.F.A.)

Contact Persons
Rick Johnson
Associate Director
rnj@arches.uga.edu
(706) 542-1574

Shelley Zuraw
Associate Director
szuraw@arches.uga.edue
(706) 542-1576

Department
Lamar Dodd School of Art
College of Arts and Sciences

Description of the Program

Students are encouraged to develop a personal style in the area or the materials they specialize in. The B.F.A. candidate should achieve an insight into and an understanding of the nature of the materials they choose to work with. In most areas, students are required to present an exhibition before graduation that demonstrates their achievement in developing a mature and cohesive body of work.

Specific course requirements vary for each of the following areas of specialization: Ceramics, Digital Media, Drawing, Fabric Design, Graphic Design, Interior Design, Jewelry and Metal Work, Painting, Photography, Printmaking, Scientific Illustration, and Sculpture. Contact the School of Art or visit the online bulletin (www.bulletin.uga.edu) for a list of requirements for each area.

Career Opportunities

Art majors enter the profession to pursue both fine art practice and applied art in business as well as in education and graduate study. Students are prepared for work in technical as well as creative areas of art and design. Each specialization offers a variety of employment opportunities in areas ranging from mass communications to the service industries.

Entrance Requirements

Entry to the B.F.A. program requires completion of Core Areas A-E and Area F. Students will be accepted as provisional majors until they have completed ARST 1050 and either ARST 1060 or 1080 with a grade of C or better. Students must successfully pass the Portfolio Review. Students entering with pre-existing college credit must have a minimum overall GPA of 2.5.

Expectations of Transfer Students

Transfer students must successfully pass the Portfolio Review. Aspiring B.F.A. candidates who transfer from within the University System of Georgia are urged to fulfill Area F of the Core Curriculum with art courses equivalent to the courses required in Area F by UGA.

Special Requirements

A minimum cumulative average of 2.0 and a C or better in all art courses are required for graduation.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
ARHI 2100; ARST 1040, 1050, 1060, 1070, 1080; additional 2000-level ARST course determined by area of specialization	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Fees are required to cover the expense of materials in some studio courses.

Scholarships

The Kuzmicki-McCutchen Scholarships are awarded to high school seniors who plan to major in art at the University of Georgia. Submission of portfolios, letters of recommendation and transcripts occurs in December. Contact the School of Art for details.

The Albert Christ-Janer and Lamar Dodd Scholarships are awarded to high school seniors in conjunction with the annual School Art Symposium for study the following year.

The scholarships listed below are open to any full-time student majoring in any area of the visual arts who has completed a minimum of one year of study in the School of Art. Preference is generally given to students who will be juniors or seniors but in the final analysis, all factors are taken into consideration before a decision is reached. Applications will be screened by an appointed faculty committee which will have sole discretion in determining recipients of the awards. Recipients of scholarships may be required to participate in a group exhibition in the Visual Arts Gallery.

Mary Rosenblatt Scholarships: Established primarily to assist students who are planning a career in teaching; however, they are not limited to students majoring in art education.

Betty Cabin Scholarships: To assist worthy students majoring in any program of the school.

Vince Dooley Scholarships: To assist worthy students majoring in any program of the school.

Minor in Art

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Art/Art Education

Degree
Bachelor of Fine Arts (B.F.A.)

Contact Person
Carole Henry
Area Chair
ckhenry@arches.uga.edu
(706) 542-1624

Department
Lamar Dodd School of Art
College of Arts and Sciences

Description of the Program

The B.F.A. in Art Education prepares art teachers at the elementary, middle, and high school levels to promote the central role of the visual arts in the lives of their students. The successful B.F.A. candidate will be able to demonstrate a professional knowledge of fundamental art concepts, materials, and teaching techniques.

Students are required to take 45 hours in art courses beyond the 18 that are required in Area F of the core curriculum, including painting, printmaking, ceramics, sculpture, a studio sequence, 9 hours of studio electives, 6 hours in Art Education, and 9 hours in Art History at the 3000-4000 levels. In addition, they must take 18 hours in professional Education including 9 in Student Teaching.

Career Opportunities

Students majoring in Art Education not only have the same opportunities as any art major, but also have additional opportunities in a wide range of teaching situations. Virtually all of the graduates desiring to teach find teaching positions. Salaries usually begin around $24,000 and go beyond $45,000. The primary positions available are as art teachers at the elementary, middle and secondary levels in both private and public schools. As the urban areas are most sought after, it is sometimes easier to find positions in the outlying areas. There are also some positions available in various institutions such as hospitals, day care centers, homes for the elderly, scout groups, camps, art centers, museums and church-related programs.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F. Students will be accepted as provisional majors until they have completed ARST 1050 and either ARST 1060 or 1080 with a grade of C or better. Students must successfully pass the Portfolio Review (see Portfolio Review below). Students entering with pre-existing college credit must have a minimum overall GPA of 2.5. Admission to and retention in the Art Education Program will be determined by review of the student's performance and the availability of placements for student teachers.

Expectations of Transfer Students

Transfer students must successfully pass the Portfolio Review before they can become B.F.A. majors in art education. If students have previously completed the basic foundation courses—ARST 1050 and 1060 and/or 1080 (or their equivalents)—they should consider taking the Portfolio Review the semester before they enroll for the first time at UGA.

Porfolio Review

The review is offered at the end of every fall and spring semester. Before taking the review, students must have completed ARST 1050 and either ARST 1060 or 1080 (or their equivalents). Successful completion of the review results from both a judgment of the art work submitted and the maintenance of an overall G.P.A. of 2.5.

Special Requirements

The B.F.A. in Art Education requires 126 hours, which is six hours more than the University norm of 120 hours. The student must also be admitted to Teacher Education. A 2.5 GPA must be maintained to remain in the Teacher Education program. No grade below C in major courses will be accepted.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
ARHI 2100, 1050, 1060, 1070, 1080; one 2000-level ARST course	
Major Requirements	66
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**126**

Fees

Fees are required to cover materials in some studio courses.

Scholarships

W. Robert Nix Art Education Award: To recognize and assist deserving Art Education students. The Awards are given during the academic term that the students are enrolled for their "Student Teaching."

The Kuzmicki-McCutchen Scholarships are awarded to high school seniors who plan to major in art at the University of Georgia. Submission of portfolios, letters of recommendation and transcripts occurs in December. Contact the School of Art for details.

The Albert Christ-Janer and *Lamar Dodd Scholarships* are awarded to high school seniors in conjunction with the annual School Art Symposium for study the following year.

The scholarships listed below are open to any full-time student majoring in any area of the visual arts who has completed a minimum of one year of study in the School of Art. Preference is generally given to students who will be juniors or seniors but, in the final analysis, all factors are taken into consideration before a decision is reached. Applications will be screened by an appointed faculty committee which will have sole discretion in determining recipients of the awards. Recipients of scholarships may be required to participate in a group exhibition in the Visual Arts Gallery.

Mary Rosenblatt Scholarships: Established primarily to assist students who are planning a career in teaching; however, they are not limited to students majoring in art education.

Betty Cabin Scholarships: To assist worthy students majoring in any program of the school.

Vince Dooley Scholarships: To assist worthy students majoring in any program of the school.

Art/Art History

Degree
Bachelor of Arts (A.B.)

Contact Person
Shelley Zuraw
Area Chair
szuraw@arches.uga.edu
(706) 542-1576

Department
Lamar Dodd School of Art
College of Arts and Sciences

Description of the Program

Students are expected to achieve a basic knowledge of the history of art within the broader context of social, intellectual, and cultural history. Major-related courses in Area F of the core curriculum include the introductory art history (ARHI 2100 or 2110H, Monuments of World

Art) and 15 hours of introductory or survey courses from specified areas, 30 hours of upper level art history courses, and 18 hours of major electives within the humanities, sciences, and social sciences excluding studio art and art history but including a foreign language through the fourth semester.

Career Opportunities

An undergraduate degree in art history provides the student with a broad liberal arts education; it can, therefore, be used as the basis for further study in many fields leading to a variety of professional careers. The student who wishes to pursue a career in art history should consider graduate studies on the M.A. or Ph.D. level. With such advanced degrees, professional employment opportunities include college and university teaching, museum and research positions, as well as careers in restoration and conservation.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F. Students entering with pre-existing college credit must have a minimum overall GPA of 2.5.

Expectations of Transfer Students

Transfer students are urged to take a foreign language.

Special Requirements

Students must earn at least a C in all major courses.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
ARHI 2100	
Fifteen hours of 1000/2000-level courses selected from the following areas: AFAM; ANTH; ARST; ASTR; BIOL; BTNY; CBIO; CHEM; CLAS; CMLT 2111, 2210, 2212, 2220, 2400; CSCI; ECOL; ECON; GEOG; GEOL; HIST; MARS; MATH; MUSI (2000-level); PHIL; PHYS; POLS; PSYC; RELI; SOCI; WMST	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Fees are required to cover the expense of materials in some studio courses.

Scholarships

The Kuzmicki-McCutchen Scholarships are awarded to high school seniors who plan to major in art at the University of Georgia. Submission of portfolios, letters of recommendation and transcripts occurs in December. Contact the School of Art for details.

The Albert Christ-Janer and *Lamar Dodd Scholarships* are awarded to high school seniors in conjunction with the annual School Art Symposium for study the following year.

The scholarships listed below are open to any full-time student majoring in any area of the visual arts who has completed a minimum of one year of study in the School of Art. Preference is generally given to students who will be juniors or seniors but, in the final analysis, all factors are taken into consideration before a decision is reached. Applications will be screened by an appointed faculty committee which will have sole discretion in determining recipients of the awards. Recipients of scholarships may be required to participate in a group exhibition in the Visual Arts Gallery.

Mary Rosenblatt Scholarships: Established primarily to assist students who are planning a career in teaching; however, they are not limited to students majoring in art education.

Betty Cabin Scholarships: To assist worthy students majoring in any program of the school.

Vince Dooley Scholarships: To assist worthy students majoring in any program of the school.

Art/Studio Art (A.B.)

Degree
Bachelor of Arts (A.B.)

Contact Person
William A. Marriott
Area Chair
bmarriot@arches.uga.edu
(706) 542-1639

Department
Lamar Dodd School of Art
College of Arts and Sciences

Description of the Program

In the A.B. program in Studio Art, students are taught to use techniques and tools associated with studio media; to understand the non-verbal language of art and design in terms of artistic principles and application; to be able to organize visual elements both rationally and intuitively according to understood artistic principles; and to become familiar with the major achievements in the history of art. The program requires 24 hours in studio art beyond the 15 hours in Area F of the core curriculum. Thus, the major requires a total of 39 hours of studio courses. In addition to the

Monuments of Art History, students must take 9 hours of art history at the 3000 or 4000 level. Required electives include a second literature course and a foreign language through the fourth semester. The A.B. in Studio Art is intended for students who want more academic courses and freedom to choose electives over a wider range of offerings than is afforded by the B.F.A. programs in Studio Art.

Career Opportunities

This degree program provides the student with a broad liberal arts education; it can, therefore, be used as the basis for further study in many fields, including art, or qualify a person for entry-level positions that require a liberal arts education.

Entrance Requirements

For students who matriculate originally at UGA, completion of Core Areas A-E and Area F and successful completion of Portfolio Review are required (see Portfolio Review below). Students entering with pre-existing college credit must have a minimum overall GPA of 2.5.

Expectations of Transfer Students

Transfer students must successfully pass the Portfolio Review before they can become A.B. studio art majors. If students have previously completed the basic foundation courses—ARST 1050 and 1060 and/or 1080 (or their equivalents)—they should consider taking the Portfolio Review the semester before they enroll for the first time at UGA.

Portfolio Review

The review is offered at the end of every fall and spring semester. Before taking the review, students must have completed ARST 1050 and either ARST 1060 or 1080 (or their equivalents). Successful completion of the review results from both a judgment of the art work submitted and the maintenance of an overall G.P.A. of 2.5.

Special Requirements

Students must earn at least a C in all major courses.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
ARHI 2100; ARST 1050, 1060, 1070, 1080; one 2000-level ARST course	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Some studio courses require additional fees.

Scholarships

The Kuzmicki-McCutchen Scholarships are awarded to high school seniors who plan to major in art at The University of Georgia. Submission of portfolios, letters of recommendation and transcripts occurs in December. Contact the School of Art for details.

The Albert Christ-Janer and Lamar Dodd Scholarships are awarded to high school seniors in conjunction with the annual School Art Symposium for study the following year.

The scholarships listed below are open to any full-time student majoring in any area of the visual arts who has completed a minimum of one year of study in the School of Art. Preference is generally given to students who will be juniors or seniors but, in the final analysis, all factors are taken into consideration before a decision is reached. Applications will be screened by an appointed faculty committee which will have sole discretion in determining recipients of the awards. Recipients of scholarships may be required to participate in a group exhibition in the Visual Arts Gallery.

Mary Rosenblatt Scholarships: Established primarily to assist students who are planning a career in teaching; however, they are not limited to students majoring in art education.

Betty Cabin Scholarships: To assist worthy students majoring in any program of the school.

Vince Dooley Scholarships: To assist worthy students majoring in any program of the school.

Biochemistry and Molecular Biology

Degree
Bachelor of Science (B.S.)

Contact Person
Dr. Michael Adams
adams@bmb.uga.edu
(706) 542-2060

Department
Biochemistry and Molecular Biology
College of Arts and Sciences

Description of the Program

The program provides students with a rigorous background in both the biological and physical sciences with an emphasis on the chemistry of life processes. Following introductory courses in biochemistry, genetics, cell biology, and molecular biology, students study advanced topics in biochemistry, including biotechnology, human disease, and physical biochemistry. Two semesters of laboratory research are required, typically as an independent research project in the laboratory of a faculty member, together with electives in microbiology, immunology, genetics, and/or developmental biology.

Career Opportunities

The program is designed for students who will spend their career in the biological sciences or in a closely related field. The program prepares students for post-degree professional schools either in the life sciences (medicine, pharmacy, dentistry, optometry, etc.) or in scientific research typically via graduate school for careers either in industry or academia.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

To prepare for course work in this major, the following courses are required: BIOL 1107-1107L and 1108-1108L; CHEM 1411, 1411L, 1412, 1412L (or CHEM 1211, 1211L, 1212, 1212L, and 2300, 2300L); CHEM 2211, 2211L and 2212, 2212L and PHYS 1211-1211L and 1212-1212L (or PHYS 1111-1111L and 1112-1112L). Substitution of any of the above courses will be individually considered based on the documentation provided by the student.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: BIOL 1107-1107L, CHEM 1211, 1211L, and MATH 2200, 2200L (take under general electives if not taken in Area D)	
Preferred course in Area E: ANTH 1102	
Area F:	18
BIOL 1108-1108L; CHEM 1212, 1212L, 2211, 2211L; PHYS 1111-1111L or 1211-1211L; two hours of electives	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Biochemistry and Molecular Biology

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Biological Engineering

Degree

Bachelor of Science in Biological Engineering (B.S.B.E.)

Contact Person

E. Dale Threadgill, P.E.
Department Head
ugrad.prog@engr.uga.edu
(706) 542-1653
www.engr.uga.edu

Department

Biological and Agricultural Engineering
College of Agricultural and Environmental Sciences

Description of the Program

The Bachelor of Science in Biological Engineering (B.S.B.E.) degree program provides students with an excellent professional engineering education in complementary biological and engineering sciences so they may develop as experts, scholars, and entrepreneurs capable of implementing new ideas and technologies in the complex biologically-based industries.

The program meets critically important needs for engineering systems in the rapidly advancing field of biotechnology. Recent discoveries in biological sciences are providing new ways to beneficially manipulate biological systems ranging from individual cells to entire ecosystems. Engineering of biological systems can increase the quality, quantity, and cost effectiveness of production of food and other useful substances. Studies and surveys have identified needs and opportunities for engineering personnel in biomanufacturing, bioprocessing, and biocontrols. Graduates of this program will meet the critical needs of the developing biologically-based industrial and manufacturing sector in the United States.

The four-year professional engineering program provides the student with a balance of basic sciences, humanities, social sciences, engineering sciences, biological sciences, and courses in engineering design and analysis. All students complete biological science courses in biology, organic chemistry, microbiology, and biochemistry with an option to select additional courses in genetics, cell biology, zoology, or botany. Engineering science courses required are statics, fluid mechanics, strength of materials, electrical circuits, heat transfer, and thermodynamics.

Three areas of engineering emphasis are provided: 1) Environmental, 2) Bioprocessing, and 3) Biomedical. These emphasis areas allow the student to tailor course work toward an area of their primary interest. Based on their selected area, students select from engineering courses in mass transport and rate phenomena, biomaterials, engineering and design of biological processes, biomechanics, environmental engineering, instrumentation for environmental quality and bioprocess monitoring and control. Additional electives are available to enhance the selected area of emphasis. A dual degree program is available which allows a student to earn both the B.S.B.E. degree with the environmental area of emphasis and the Bachelor of Science in Environmental Health (B.S.E.H.) simultaneously in a five-year course of study. The development of both technical and communication skills is stressed throughout the program. Students are encouraged to participate in professional activities through local and national organizations.

The B.S.B.E. degree program is accredited by the Accrediting Board for Engineering and Technology (ABET) and graduating seniors must complete the fundamentals of Engineering examination prior to graduation. Successful completion of this exam qualifies the student for Engineer in Training registration which is a prerequisite for the Professional Engineer registration.

The objectives of the B.S.B.E. program are to provide graduates with:

1. Educational experiences drawn from biological sciences, engineering sciences, and engineering design which motivate and qualify graduates to recognize and solve engineering problems in biological systems.
2. Superb technical skills in the areas of computers, information transfer, and communication; innovative and imaginative attitudes; and an appreciation for the management function.
3. Learning experiences necessary for the synthesis of knowledge across disciplines in the social sciences, humanities, and natural sciences in order to understand the ethical, environmental, and social impacts of decisions.
4. An appreciation for continued professional development throughout life-long learning.

Course work in the B.S.B.E. program is selected to assure that graduates develop the desired competencies in a wide range of engineering topics. The engineering design experience is integrated throughout the B.S.B.E. curriculum. All students are required to take a first-year course in Introduction to Engineering Design, a second-year course in Engineering Design Methodology, and a fourth-year capstone course in Engineering Design. The capstone course draws upon previous course work and includes a major engineering design team project which focuses on professional practice in the student's area of emphasis. The engineering design experience is structured to fulfill the above objectives.

Career Opportunities

Employment demand for engineers remains among the most favorable of all the professions. A particularly rapid increase in demand has occurred in food, agricultural, environmental, and therapeutic drug industries due to the recent development of processes and tools in biotechnology. Biological engineers will be essential to the solution of many process-development needs if the results from the efforts of life scientists are to be successfully transferred to full-scale production. Solving problems in biocatalysis, heat and mass transfer, efficient energy conversion and product recovery in biological processes requires an integration of the engineering and biological science disciplines.

The estimated number of job openings for biological engineers is about 2,500 per year for the next ten years. These positions include industrial fermentation, cell culture process engineering, filtration engineering, environmental consulting and regulation, and others. A B.S. in Biological Engineering will meet the educational qualifications for each of these positions. Graduates will also be highly qualified for employment in more traditional engineering positions.

Certificate Programs

Undergraduate Certificate Programs in Computer Systems Engineering and Engineering Physics are available to B.S.B.E. students. These certificates are jointly offered by the Department of Computer Science and the Department of Physics and Astronomy.

Entrance Requirements

Entrance requirements for this major include completion of Core Areas A-E and Area F; a grade of C or better and a 2.5 GPA for the following courses: MATH 2200, 2200L, 2210, 2210L, 2500, 2700, PHYS 1211-1211L, 1212-1212L, CHEM 1211, 1211L, 1212, 1212L, BIOL 1107-1107L; and an overall GPA of 2.5.

Special Requirements

Students must earn a C or better in all required mathematics and physics courses and ENGR 1120, 2110, 2120, 2140, 2170, 3140, 3150, and 3160. Competency in a computer programming language is expected and may be satisfied with ENGR 1140.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	

Required courses in Area A: ENGL 1101, 1102, and MATH 2200, 2200L

Preferred courses in Area C: SPCM 1100 and one course from CMLT 2210, 2220, 2400; ENGL 2310, 2320, 2330, 2340, or 2400 (take under general electives if not taken in Area C)

Preferred courses in Area D: BIOL 1107-1107L, CHEM 1211, 1211L, and MATH 2210, 2210L (take under general electives if not taken in Area D)

Area F: 18

CHEM 1212, 1212L; MATH 2500, 2700; PHYS 1211-1211L, 1212-1212L

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships

The following scholarships are available for biological engineering majors in the Biological and Agricultural Engineering Department: Bruce E. Dixson Scholarship; Georgia Section ASAE Scholarship; Rudie Driftmier Scholarship; Goodloe Yancey Scholarships; B. Derrell McLendon Scholarship; Robert H. Brown Scholarship. In addition, many scholarships are available at the College and University levels.

Cooperative Education

The Biological and Agricultural Engineering Department offers its students an opportunity to integrate academic instruction and real-life applications through a cooperative plan of education. Usually beginning after the freshman year, the plan allows for alternating semesters of full-time, off-campus professional work experience in designated industries, agencies and laboratories arranged by the Department. The student is considered by the University to be in an uninterrupted program of study since the student is enrolled for academic credit while on work-experience semesters. While co-op placement does not imply permanent employment of the student upon graduation, it does provide an extended period for mutual evaluation by the student and the cooperating industry enhancing the possibility of permanent employment.

Biological Science

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Adam J. Davis
Assistant Professor
ajdavis@arches.uga.edu
(706) 542-1350

Department
Poultry Science
College of Agricultural and Environmental Sciences

Description of the Program

This major provides a very flexible program of study integrating both biological and agricultural sciences. In addition, it can be used by students to prepare for professional programs in veterinary medicine, pharmacy, medicine, and dentistry, as well as for advanced degrees (Master of Science and Doctor of Philosophy) in any of the biological sciences.

Career Opportunities

This major provides preparation for graduate or professional study as well as for employment in business, industry, or government positions requiring a broad background in the biological sciences. Opportunities for work in biology and agriculture are expected to grow as an increasing human population demands more food, fiber, and wood products, health care, and environmental stewardship.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students must have taken courses in general biology, general chemistry, organic chemistry, precalculus math, and physics (check with advisor of this program for specific course sequence requirement).

Program Requirements

Semester Core Curriculum **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1113

Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)

Preferred courses in Area D: BIOL 1107-1107L; CHEM 1211, 1211L; and MATH 2200, 2200L (take under general electives if not taken in Area D)

Area F: 18

BIOL 1108-1108L; CHEM 1212, 1212L, 2211, 2211L, 2212, 2212L; PHYS 1111-1111L

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships

Several scholarships are available to students in the College of Agricultural and Environmental Sciences. For more information, contact the Office of Academic Affairs in the College.

Internships

Internships are available but not required.

Biology

Degree
Bachelor of Science (B.S.)

Contact Person
Dr. William Barstow
Associate Division Chairman and Director of Undergraduate Degree Programs in Biology
barstow@dogwood.botany.uga.edu
(706) 542-1691

Department
Biology
College of Arts and Sciences

Description of the Program

The Bachelor of Science (B.S.) degree with a major in biology is a liberal arts degree with a concentration in the biological sciences. It is not a pre-professional degree, but it does prepare students for professional programs in veterinary medicine, dentistry, medicine, pharmacy, etc., as well as for advanced degrees in the biological sciences, i.e., Master of Science (M.S.) and Doctor of Philosophy (Ph.D).

A major in biology is valuable because of the important role that biology plays in our everyday lives. An understanding of basic biological principles is crucial in interpreting the implications of environmental degradation and loss of biodiversity, the impact of genetic engineering and biotechnology in crop improvement, the treatment of disease, forensic medicine, and legal and ethical issues associated with the above.

Career Opportunities

A major in biology offers an excellent background for a variety of careers and advanced training. Many biology majors go into medicine, law, dentistry, veterinary medicine, pharmacy, optometry, and academia. Numerous career opportunities can be found in government, business, pharmaceuticals, biotechnology, environmental survey/control and other industries. In addition, opportunities are available in other disciplines such as journalism, broadcasting, and public policy. A more complete treatment of careers open to those with a biology degree is provided in the *Handbook For Biology Majors.*

Entrance Requirements

Enty to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students who are transferring upon completion of two years of course work are strongly encouraged to complete Areas D and F as specified for the biology major. Students should contact the College of Arts and Sciences or the Biology Program Office for information on how best to fulfill these requirements. Students are strongly encouraged to take a majors' introductory biology sequence if it is available. At least 15 hours of the advanced biology courses required for the major must be taken in residence at UGA.

Program Requirements

Contact the department for information about this major.

Minor in Biology

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Botany

Degree
Bachelor of Science (B.S.)

Contact Person
David Porter
Professor
porter@dogwood.botany.uga.edu
(706) 542-1782

Department
Botany
College of Arts and Sciences

Description of the Program

The undergraduate core curriculum in Botany is aimed at giving students a broad understanding of plant biology but with experience in chemistry, physics and mathematics. In addition to courses in botany, the undergraduate major will take core biology courses including biochemistry, genetics and ecology. Advanced courses are typically restricted in their enrollment for more interactive learning and typically include laboratory experience as well as lectures. Independent research is an important option available to advanced undergraduates. Directed study in the field or laboratory with a faculty member on a specific research topic gives the student first-hand experience with the actual process of botanical investigation.

Career Opportunities

Careers in Plant Sciences are numerous and diverse. They include research at universities, government laboratories and at biotechnology companies; teaching at the high school, college or university level; management and interpretation as staff biologist with state and federal agencies; and administration and sales with plant and plant product related industries. An undergraduate major in botany also provides a strong background for graduate-level study in botany and other biological sciences.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F. To complete the degree within four years, the student must complete CHEM 1211, 1211L and 1212, 1212L as part of the core curriculum in Areas D or F.

Expectations of Transfer Students

Recommended courses: 1) Botany or general Biology sequence; course content should be very similar to sequences taught at UGA since the introductory course content is prerequisite to the upper division biological sciences courses taught at UGA. Sequences should be completed at one institution; 2) General Chemistry; 3) Calculus.

The courses in biology and chemistry are prerequisite to upper division biology courses. Students who transfer to UGA without these courses will be delayed in completing the requirements for the major.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: CHEM 1211, 1211L, 1212, 1212L; MATH 2200, 2200L (take under general electives if not taken in Area D.)	
Area F:	18
Choose one sequence from BIOL 1107-1107L, 1108-1108L or BTNY 1210, 1210L, 1220, 1220L; PHYS 1111-1111L, 1112-1112L	
2-3 additional hours with approval of advisor	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Botany

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Broadcast News

Degree
Bachelor of Arts in Journalism (A.B.J.)

Contact Person
Dr. Alison Alexander
Department Head
alison@arches.uga.edu
(706) 542-3785

Department
Telecommunications
College of Journalism and Mass Communication

Description of the Program

This program is designed to train students in the skills necessary for on-air opportunities in gathering, analyzing, and delivering the news in radio and television. The major provides students with professional courses of study in both the theory and practice of Broadcasting.

Career Opportunities

Career choices for students with this major include traditional broadcasting opportunities in radio and television.

Entrance Requirements

Applications are accepted only from students who have met minimum requirements in number of credit hours (at least 60 semester hours and satisfactory completion of Areas A-F of the Core Curriculum which includes foreign language at the second and third levels and micro or macro economics), cumulative and overall grade point averages of at least 2.5, and English proficiency (recentered SATV score of at least 650, ACTV score of at least 30 or at least 77 on an English proficiency test administered by UGA's Testing Center). Meeting *minimum* requirements assures consideration but is not a guarantee of admission.

A point system based on academic achievement and test scores determines a student's standing among other applicants. Those presenting the highest qualifications are accepted each semester of the academic year.

Expectations of Transfer Students

The academic program for the A.B.J. degree consists of two parts: Areas A-F of the core curriculum (which includes foreign language at the second and third levels and micro or macro economics) taken during the freshman and sophomore years at UGA or another institution and the professional degree program taken after formal admission to the Grady College. Pre-Journalism students at the University of Georgia are enrolled in the Franklin College of Arts and Sciences.

Admission to the University of Georgia is not a guarantee of admission to the Grady College of Journalism and Mass Communication. A maximum number of spaces in each major is determined by the availability of teaching staff, classroom space, lab facilities and other resources. In reaching its decisions on how many students may be admitted each semester, the Admissions Committee is governed by the number already enrolled in each major, the number expected to graduate and the number applying. Grade point averages and test scores are considered the primary measures upon which admission decisions are based. It is recognized that the inclusion of talented students of diverse international and racial backgrounds is an indispensable part of the educational process and the Committee considers the need for such diversity in reaching its decisions. See Entrance Requirements

Applications must be submitted directly to the Office of Undergraduate Services, Room 201, College of Journalism and Mass Communication. The deadline is 4:00 p.m. on Friday of the second full week of classes.

Special Requirements

No more than two courses or seven semester credit hours in journalism and mass communication courses earned before admission to the Grady College, whether at UGA or another institution, may be applied toward satisfaction of requirements for the A.B.J. degree. At least 20 semester credit hours of journalism and mass communication courses which satisfy A.B.J. degree credit must be earned at the University of Georgia.

A total of 121 semester hours (includes one hour of PE) must be successfully completed to earn the A.B.J. degree. At least 90 semester hours must be taken outside the college, of which at least 65 must be in liberal arts and sciences courses. No more than 30 semester credit hours in journalism and mass communication courses may be applied toward requirements for the Broadcast News major.

A grade of C or higher must be earned in any journalism and mass communication course which counts toward satisfaction of requirements for the A.B.J. degree.

Program Requirements

Semester Core Curriculum **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Preferred courses in Area C: One literature course from CLAS, CMLT, ENGL

Preferred course in Area D: STAT 2000

Preferred courses in Area E: ANTH 1102 or GEOG 1125

Area F: 18

Foreign language sequence through the third semester

ECON 2105 or 2106

Choose nine hours of 1000/2000-level courses from the following: ANTH, ARTS, CLAS, CMLT, DRAM, ENGL, GEOG, HIST, PHIL, POLS, PSYC, RELI, SOCI, SPCM, STAT

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Fees

Some courses require the purchase of a supply card from the University bookstore.

Scholarships

The Grady College administers about 30 undergraduate scholarships. Students may submit a general application during the spring semester that assures them of consideration for any of the scholarships for which they qualify for the coming academic year.

Application forms may be obtained in the Office of Undergraduate Sercies, Room 201, Grady College of Journalism and Mass Communications.

Internships

Valuable practical experience is gained by serving internships. Although not required, internships are considered essential to a student's total educational experience and greatly enhance job opportunities upon graduation. Credit hours may be earned for successful completion of an internship if:

1. Advance approval is received from the student's department. A written request must be submitted and include a job description, length of internship, name of supervisor and rate of pay. Also, a letter verifying the internship offer must be submitted by the employer prior to the first day of the semester in which the internship is served.
2. Certain basic courses as determined by the department have been completed.
3. The internship covers a minimum number of weeks of employment as determined by the department.
4. During the semester of the internship the student registers concurrently for TELE 5010,

which is included in the maximum semester hours of journalism and mass communication credit that may be earned toward the Broadcast News major.

5. A written report is submitted by the employer prior to the last day of the semester in which the internship is served describing the intern's duties and the quality of performance.
6. A final, written report of week-by-week activities is submitted by the student to the department prior to the last day of the semester in which the internship is served.

Business Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Wanda Stitt-Gohdes
Undergraduate Coordinator
wlsg@arches.uga.edu
(706) 542-4078

Department
Occupational Studies
College of Education

Description of the Program

A major in business education prepares educators for grades 7-12 in Georgia. The curriculum provides the opportunity for students to take courses in accounting, economics, and legal studies in the Terry College of Business. A series of business education and professional education courses are taken in the College of Education.

Career Opportunities

Students are prepared as teachers for grades 7-12 and post-secondary technical institutes. This educational experience also provides an excellent background for those who may choose to move into the corporate training and development arena.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F with grades of C or better in Area F, a passing score on Praxis I, and an overall GPA of 2.0 (2.5 is required for admission to teacher education).

Expectations of Transfer Students

Recommended courses for transfer students include accounting, business law, precalculus, economics, and psychology. Courses and/or competence in keyboarding is also required for upper level courses.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area E: ECON 2105, 2106, and PSYC 1101 (minimum grade of C)	
Area F:	18
ACCT 2101 (minimum grade of C), 2102 (minimum grade of C); EFND 2030; EPSY 2020; LEGL 2700 (minimum grade of C); three hours of an elective	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Special Requirements

A 2.5 GPA is required for admission to teacher education.

Internships

Supervised observations and participation in cooperating schools is required for all students. Full-time student teaching is required for certification.

Cellular Biology

Degree
Bachelor of Science (B. S.)

Contact Person
Charles H. Keith
Associate Professor
chkeith@cb.uga.edu
(706) 542-3331

Department
Cellular Biology
College of Arts and Sciences

Description of the Program

The Bachelor of Science degree in Cellular Biology is a liberal arts degree. Although it is not a preprofessional program, the major in Cellular Biology is often chosen by students who wish to prepare themselves for professional studies in medicine, veterinary medicine, dentistry, or optometry, as well as by those who intend to pursue graduate studies leading to an M.S. or Ph.D.

Cellular Biology is a young discipline in biological sciences and encompasses many of the recent dramatic discoveries relating to the mechanisms of cell life, developmental biology, and immunology. In addition, cellular biology relates to the understanding of the position of protists among living organisms, the relationships between parasites and host animals, and the mechanistic understanding of organismic animal function. Accordingly, the major requires a core of cell and developmental biology, genetics, biochemistry, and practical laboratory experience; beyond this core, electives are available that explore the wider aspects of the subject.

Career Opportunities

Apart from the professional programs listed above, a major in cellular biology qualifies a student to pursue a research career in experimental biology either in graduate school or in industry (see Biology).

Entrance Requirements and Expectations of Transfer Students

Entry to the major requires completion of Core Areas A-E and Area F, including BIOL 1107-1107L, BIOL 1108-1108L; CHEM 1211, 1212; CHEM 2211, 2211L; CHEM 2212, 2212L; PHYS 1111-1111L; PHYS 1112-1112L.

Special Requirements

Students must maintain a minimum GPA of 2.0 and a minimum grade of C in all major courses.

Program Requirements

Semester Core Curriculum — **Hours**
Areas A-E: 42
See Core Curriculum
Required courses in Area A: ENGL 1101, 1102, and MATH 1113
Preferred courses in Area D: BIOL 1107-1107L, CHEM 1211, 1211L and MATH 2200, 2200L (take under general electives if not taken in Area D)
Area F: 18
BIOL 1108-1108L; CHEM 1212, 1212L; PHYS 1111-1111L, 1112-1112L; two hours of electives at the 1000-2000 level
Major Requirements 60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Minor in Cellular Biology

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Chemistry

Degree
Bachelor of Science (B.S.)

Contact Person
Dr. Robert A. Scott
Department Head
(706) 542-2726

Department
Chemistry
College of Arts and Sciences

Description of the Program

This program is designed for the student who intends to major in chemistry but may wish to pursue a career in some other science-related field, including the health sciences, business, and the legal profession. It is often chosen by students who intend to pursue postgraduate studies in medicine, dentistry, or veterinary medicine. The curriculum for this degree consists of a selection of chemistry courses and supporting courses in other areas of physical and biological sciences as well as mathematics. This program is intended to provide the student with a broad background in chemistry and related disciplines.

Career Opportunities

Students who successfully complete this curriculum will possess a broad background in chemistry and related sciences with sufficient depth of knowledge to pursue a wide variety of career options, ranging from employment as chemists in government or industrial laboratories to enrollment in a wide variety of post graduate degree programs, including those offered by professional schools of medicine, dentistry, and law.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

To transfer into chemistry without delay, students must already have credit in two semesters of freshman chemistry, two semesters of organic chemistry, one semester of quantitative analysis, one semester of calculus, and two semesters of non-calculus based physics.

Program Requirements

Semester Core Curriculum — **Hours**
Areas A-E: 42
See Core Curriculum
Required courses in Area A: ENGL 1101, 1102, and MATH 1113
Preferred courses in Area D: MATH 2200, 2200L; choose two of the following lab science courses: CHEM 1211, 1211L;

BIOL 1107-1107L or 1108-1108L (take under general electives if not taken in Area D)

Area F: 18

CHEM 1212 or 1312H or 1412; CHEM 1212L or 1312L or 1412L; PHYS 1111-1111L or 1211-1211L; PHYS 1112-1112L or 1212-1212L

Choose two courses from CHEM 2211, 2211L; 2212, 2212L; 2300, 2300L

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Minor in Chemistry

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Chemistry (B.S.Chem)

Degree

Bachelor of Science in Chemistry (B.S.Chem)

Contact Person

Dr. Robert A. Scott
Department Head
(706) 542-2726

Department

Chemistry
College of Arts and Sciences

Description of the Program

This program is designed for the student who intends to become a professional chemist. The curriculum for this degree consists of a selection of rigorous chemistry courses as well as supporting courses in related areas of physical science and mathematics. This curriculum meets the standards set for certification by the American Chemical Society.

Career Opportunities

All students who satisfactorily complete this curriculum are certified by the Department of Chemistry to the American Chemical Society as having completed the undergraduate training recommended by the A.C.S. The curriculum for this degree offers training in the field of chemistry and its allied sciences for students who desire to enter commercial or government laboratories or the teaching profession, to become associated with chemical industries in a non-technical position, or to pursue graduate work in chemistry in order to enter some field of research or college teaching.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F and a GPA of 2.5 or higher.

Expectations of Transfer Students

To transfer into chemistry without delay, students must already have credit in two semesters of freshman chemistry, two semesters of organic chemistry, one semester of quantitative analysis, two semesters of calculus, and two semesters of calculus-based physics. Students wishing to obtain this degree should enter the University no later than the beginning of their sophomore year. For further information, contact the head of the Department of Chemistry.

Special Requirements

An average GPA of 2.5 or higher is required in chemistry and in other academic subjects in both lower and upper division programs.

Program Requirements

Semester Core Curriculum **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1113

Preferred courses in Area D: CHEM 1211, 1211L; MATH 2200, 2200L; and choose one course from BIOL 1107-1107L or 1108-1108L (take under general electives if not taken in Area D)

Area F: 18

CHEM 1212 or 1312H or 1412; CHEM 1212L or 1312L or 1412L; MATH 2210, 2210L; PHYS 1211-1211L, 1212-1212L

Choose one course from CHEM 2211, 2211L; 2212, 2212L; 2300, 2300L

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Child and Family Development

Degree

Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person

Dr. Diane Hodson
Undergraduate Advisor
dhodson@fcs.uga.edu
(706) 542-4896.

Department

Child and Family Development
College of Family and Consumer Sciences

Description of the Program

This program is designed for students who want a broad background in the area of children and families across the life span. All approved minors are acceptable. Students pursuing this program may enroll in an internship program providing they meet certain criteria. Those who wish to attend graduate school are encouraged to take courses in research methods, statistics, and computer sciences.

Career Opportunities

This major prepares professionals for jobs requiring a general understanding of the behavior of individuals and families across the life span.

Entrance Requirements

A student must have completed Core Areas A-E and Area F and must be in good standing at UGA to enter the program.

Expectations of Transfer Students

Students transferring into this major should have fulfilled the core curriculum requirements. Those students who have an interest in Child and Family Development should check with the Department of Child and Family Development to determine the actual requirements for entry into these programs. Lacking the basic preparatory courses will add to the time needed to complete the degree in all programs.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum *Required courses in Area A*: ENGL 1101, 1102, and MATH 1101 *Preferred course in Area C*: SPCM 1100 *Preferred courses in Area D*: BIOL 1103, 1103L, 1104, 1104L, and MATH 1060 or PHYS 1010 or STAT 2000 *Preferred courses in Area E*: PSYC 1101 and SOCI 1101 or ANTH 1102	42
Area F: CHFD 2100, 2950-2950L; CSCI 1100-1100L; FDNS 2100; HACE 2100; four hours of foreign language or three hours of speech or social science	18
Major Requirements For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	60
Total hours required	**120**

Minor in Child and Family Development

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Child and Family Development—Early Childhood Education: Prekindergarten - Grade 2

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Dr. Julia Atiles
PreK Coordinator
jatiles@fcs.uga.edu
(706) 542-4164 (CFD) or (706) 542-4953 (Ed.).

Department
Child and Family Development
College of Family and Consumer Sciences

Description of the Program

Graduates with this major (a joint program with the College of Education) are qualified for certification to teach children in preschool through fifth (P-5 certification) grade settings in public and private schools.

Career Opportunities

This program prepares certified teachers for prekindergarten through grade five.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F, completion of Area F and pre-professional courses with a grade of C or better, a passing score on Praxis I, an overall and cumulative GPA of 2.75, documentation of 50 hours of pre-professional experience, submission of a pre-professional portfolio, and less than 12 hours of course work remaining outside of block courses.

Expectations of Transfer Students

Students transferring into this major should have fulfilled the core curriculum requirements. Those students who have an interest in Early Childhood Education should check with the Department of Child and Family Development to determine the actual requirements for entry into this program. Lacking the basic preparatory courses will add to the time needed to complete the degree.

Special Requirements

Students must meet state teacher certification requirements.

Program Requirements

Semester Core Curriculum	**Hours**
Area A-E: See Core Curriculum	42

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Preferred courses in AreaC: Foreign Language

Preferred course in Area D: STAT 2000

Preferred course in Area E: PSYC 1101

Area F:	18

CHFD 2000, 2100, 2896*, 2950-2950L*; EFND 2030*; MATH 1060 or higher (does not include MATH 1101); PEDS 2420-2420L* or HPRB 2420*

*Requirement for certification, requirement for entry into professional sequence (blocks), or prerequisite for other coursework. If not included in Area F, must be included elsewhere in program of study.

Major Requirements	60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required	**120**

Classical Culture

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Sarah Spence
Undergraduate Coordinator
sspence@arches.uga.edu
(706) 542-0417

Department
Classics
College of Arts and Sciences

Description of the Program

This program provides students with an opportunity to pursue studies in Greek and Roman literature, history, archaeology, art, philosophy, and religion, without concentrating on the ancient languages, although some study in Latin and/or Greek is strongly encouraged.

Archaeology Concentration

The Classics Department offers a concentration in archaeology under the classical culture major. Students may contact the department for details. This program provides students with an opportunity to study the archaeology, languages, art and history of the Greeks and Romans; the program also offers students archaeological field experience on a classical site.

Career Opportunities

Career opportunities for graduates include teaching at the secondary level, non-teaching academic positions, museum work, library work, editorial work, positions in the travel and tourist industry, and government positions in foreign service. The major also prepares students to enter graduate school in classics, comparative literature, linguistics, history, and other fields (for university teaching positions). Other opportunities include careers in law, journalism, and business.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Transfer students should have completed courses in world literature, as well as ancient history or classical culture, and preferably some work in Latin and/or Greek.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Preferred course in Area C: CLAS 1000 or 1010 (take under general electives if not taken in Area C)

Area F:	18

Seven to eight hours of foreign language 1001-1002 and/or 2001 if 1001 has already been satisfied (preferably GREK or LATN; GREK or LATN required for the Archaeology Concentration)

CLAS 1020 or CLAS (ANTH) 2000 [CLAS (ANTH) 2000 required for the Archaeology Concentration]

Choose three courses from CLAS (LING) 2010; CMLT 2210; HIST 2301; PHIL 1500

Major Requirements	60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required	**120**

Scholarship

The Warlick-Mannion Scholarship (up to $1,000 per year) is available to students in this major.

Minor in Classical Culture

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Cognitive Science

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Donald Nute
Professor of Philosophy and Coordinator of the Cognitive Science Program
dnute@ai.uga.edu
(706) 542-0358

Department
Artificial Intelligence Program
College of Arts and Sciences

Description of the Program

Cognitive science is an emerging new science of mind and intelligent processes in humans, animals, computers, and in the abstract. The field spans a wide variety of standard disciplines including psychology, computer science, anthropology, linguistics, biology, and education. Cognitive science is expected to play a large role in the development of the technologies, training, and intervention programs of the twenty-first century. The curriculum of this interdisciplinary major includes courses in major areas including artificial intelligence, psychological foundations, language and cultural foundations, and philosophical foundations.

Career Opportunities

A cognitive science major is preferable preparation for students who plan to go on to graduate programs in cognitive science, educational technology, artificial intelligence, instructional psychology, cognitive psychology, cognitive philosophy, or cognitive neuroscience. Cognitive science A.B. holders typically find themselves employed in technology-related positions demanding excellent technical, writing, and speaking skills.

Entrance Requirements and Expectations of Transfer Students

Entry to the major requires completion of Core Areas A-E and Area F and a cumulative GPA of 2.5.

Special Requirements

A GPA of 2.5 or better is required; 18 hours of the 24 required hours must be taken in residence.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101 or 1113 (if 1101 is exempted)	
Preferred course in Area C: LING 2100 and PHIL 1000	
Preferred courses in Area D: CSCI 1210 and BIOL 1103, 1103L	
Preferred course in Area E: ANTH 1102 and PSYC 1101	
Area F:	18
CSCI 1301-1301L; LING 2100 (if not taken in Area C)*; PHIL 1000 (if not taken in Area C)*, 2500; PSYC 1101(if not taken in Area E)*; STAT 2000	
*If taken in Areas A-E, electives may be taken in this area.	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Communication Sciences and Disorders

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Jane Harvey
Academic Professional and Undergraduate Student Advisor
jharvey@coe.uga.edu
(706)542-4561

Department
Communication Sciences and Disorders
College of Education

Description of the Program

The CMSD department in the School of Professional Studies offers an undergraduate program leading to a Bachelor of Science in Education degree (B.S.Ed.). Students desiring to practice in the areas of speech-language pathology, audiology, or education of the hearing impaired and to obtain full professional credentials and certification from the Georgia Professional Standards Commission, must obtain a master's degree from an accredited program. Students must apply to the Graduate School for acceptance into a master's program.

Career Opportunities

The master's degree is the entry-level degree for the practice of Speech-Language Pathology and Audiology in hospitals, rehabilitation settings, public schools, etc. The University of Georgia Department of Communication Sciences and Disorders and the College of Education do not endorse individuals for public school certification upon completion of the bachelor's degree in CMSD. Completion of a bachelor's degree does not guarantee acceptance into a master's degree program. These conditions apply to all individuals intending to specialize in any of the three emphasis areas offered at the graduate level: audiology, education of the hearing impaired, and speech-language pathology.

Entrance Requirements and Expectations of Transfer Students

Entry to the major requires completion of Core Areas A-E and Area F, an overall GPA of 2.75, and submission of a departmental application. Students must maintain a cumulative GPA of 2.75.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area E: PSYC 1101	
Area F:	18
CSCI 1100-1100L or CSCI 1210; EFND 2030; EPSY 2020; PHIL 1500 or 2200 or 2500; SPCM 1100 or 1500 or 2510; SPED 2000	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Comparative Literature

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Karim Traore
Undergraduate Coordinator
ktraore@arches.uga.edu
(706) 542-8123

Department
Comparative Literature
College of Arts and Sciences

Description of the Program

Comparative Literature is the study of common features in the literatures of more than one culture. It can focus on a genre, a period or a theme, or it can focus very broadly on the materials of literature itself—structure, rhetoric or language. With such a broad focus, Comparative Literature defines itself in terms of theory and method. Students can use a Comparative Literature background in a variety of ways. Generally speaking, anyone who is professionally interested in the interpretation of the written or spoken word—whether lawyer, businessperson, writer or humanities professor—can profit from the theory and methods of comparative literature.

Career Opportunities

Opportunities for graduates include graduate study, education, foreign service, and international business.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

The prerequisites to early courses in the major are stated in the Area F requirements for the major.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: At least one 2000-level CMLT course and other courses in ARHI or ARTS, CMLT, DRAM, MUSI, PHIL, or RELI	
Area F:	18
Foreign language through the second semester; two 2000-level CMLT literature courses (three hours may be satisfied under Area C); 1000/2000-level electives from AFAM, ARAB, ARGD, ARHI, ARID, ARST, ARTS, CHNS, CLAS, DRAM, ENGL, FREN, GREK, GRMN, HIST, ITAL, JPNS, KREN, LATN, LING, MUSI, PHIL, PORT, RELI, ROML, RUSS, SPAN, SWAH, WMST, YORB	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minors in Comparative Literature, Chinese Language and Literature, Korean Language and Literature, and Asian Languages and Literatures

Contact the department of Comparative Literature for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Computer Science

Degree
Bachelor of Science (B.S.)

Contact Person
E. Rodney Canfield
Department Head
(706) 542- 2911

Department
Computer Science
College of Arts and Sciences

Description of the Program

Computer science deals with the logical and mathematical foundations of computing and how to implement problem solutions as programs in a computer language. The computer science curriculum covers the design principles of key computing technologies such as hardware, operating systems, database systems, networks, graphics, and artificial intelligence. Mathematical reasoning is emphasized throughout the program.

Career Opportunities

Computer science continues to be one of the fastest growing career fields in the nation. There are critical demands for technically trained persons to provide technical support for computer operations, and to develop new computer hardware and software systems. Recent graduates of the University of Georgia Computer Science Department are employed by major computer manufacturers, software development corporations, the communications industry, consulting firms, and a host of other areas. Still other graduates have continued their education in Computer Science at excellent graduate schools.

Entrance Requirements and Expectations of Transfer Students

In order to be classified as a major in the Department of Computer Science and eligible to take major level courses, a student must have completed Core Areas A-E and Area F, must have made a grade of B or better in the prerequisite course CSCI 1301-1301L, and must have made a grade of B or better in each of two gateway courses, CSCI 1302 and CSCI(MATH) 2610.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum *Required courses in Area A*: ENGL 1101, 1102, and MATH 1113 *Preferred courses in Area D*: CSCI 1301-1301L and MATH 2200, 2200L (take under general electives if not taken in Area D)	42
Area F: MATH 2210, 2210L; CSCI 1302, 2670, 2720; two hours of CSCI or MATH course from Area D	18
Major Requirements For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	60
Total hours required	**120**

Minor in Computer Science

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Consumer Economics

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Dr. Anne Sweaney
Professor and Undergraduate Coordinator
asweaney@fcs.uga.edu
(706) 542-4877

Department
Housing and Consumer Economics
College of Family and Consumer Sciences

Description of the Program

This program prepares students to deal with managing resources from the household to the corporate level, with emphasis on the analysis of consumer issues and related policy questions. Students may choose an emphasis in family financial management. The program prepares students for graduate study or to pursue a professional degree in areas such as law or business. The major allows the student to design a course of study best suited to his or her particular career goals and interests.

Career Opportunities

Students are often employed as middle managers in business, public administration, consumer groups, family advocacy agencies, public utilities and extension services. Additional career opportunities involve responsibilities in consumer affairs, marketing, financial counseling and media information. An emphasis in family financial management may lead to careers in consumer credit or with counseling agencies, financial service firms, or social service agencies.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F and a grade of C or better in HACE 2100, ECON 2105, and ECON 2106.

Expectations of Transfer Students
Students transferring into the Consumer Economics major should have fulfilled the core curriculum requirements, including social science, humanities, and English. Students should have also completed micro and macroeconomics, introductory statistics, computer science and precalculus mathematics or logic.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: SPCM 1100	
Area F:	18
ECON 2105, 2106; HACE 2100; MATH 1113; STAT 2000; one course from CHFD 2100; CSCI 1301-1301L; FDNS 2100; LEGL 2700; MATH 2200, 2200L, 2210, 2210L; PSYC 1101; SOCI 1101; TXMI 2100	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Consumer Economics
Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Consumer Foods

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Dr. Ruthann Swanson
Associate Professor
rswanson@fcs.uga.edu
(706) 542-4834

Department
Foods and Nutrition
College of Family and Consumer Sciences

Description of the Program
Consumer Foods is directed towards helping consumers select food products that are consistent with their cultural and socioeconomic status and lifestyle preferences. Majors also apply their knowledge about the chemical, physical, and microbiological characteristics of food to the selection, preparation, home processing, storage and serving of safe food to the consumer.

Career Opportunities
Consumer Foods prepares students for careers with food service organizations, the Cooperative Extension Service, and commodity groups; industry, including consumer affairs, test kitchens, and quality control; and research in government, university, and private sector laboratories. A student should confer with his/her advisor to tailor a sequence of supporting courses and electives to meet his/her professional interests.

Entrance Requirements
Entrance requirements include completion of Core Areas A-E and Area F.

Expectations of Transfer Students
It is recommended that students transferring to the Consumer Foods major have courses in English composition, math, elementary statistics, speech communication, and either general chemistry or biology. Foods and nutrition courses taken during the junior year have general chemistry, organic chemistry, and biology as prerequisites.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred course in Area C: SPCM 1100 or 1500	
Preferred courses in Area D: CHEM 1211, 211L, BIOL 1103, 1103L or 1107-1107L, and STAT 2000	
Preferred courses in Area E: ANTH 1102 and PSYC 1101	
Area F:	18
BIOL 1104, 1104L or 1108-1108L; CHEM 1212, 1212L, CHEM 2100, 2100L or 2211, 2211L; CHFD 2100 or HACE 2100; three hours from PSYC 1101; SPCM 1100 or 1500; STAT 2000 or 2210	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Consumer Foods
Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Consumer Journalism

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Dr. Julia Marlowe
Associate Professor
jmarlowe@fcs.uga.edu
(706) 542-4851

Department
Housing and Consumer Economics
College of Family and Consumer Sciences

Description of the Program

The Consumer Journalism major includes courses from the College of Family and Consumer Sciences and the College of Journalism and Mass Communication. It is designed to prepare graduates for work requiring knowledge from the Family and Consumer Sciences areas enhanced by communication skills.

Students enter a variety of occupations including public relations, magazine writing, newspaper writing, as well as radio and television. The emphasis within an occupation focuses on areas such as consumer economics, consumer foods, merchandising, housing, or one of the other areas offered in the College.

Career Opportunities

Career opportunities for Consumer Journalism students are endless. Graduates may pursue a career in either concentration or they can combine their concentrations for a more specific career choice. Below are some of the degree combinations and possible careers that can be obtained with them: Consumer Economics/Broadcast News-Consumer Affairs Reporters; Child and Family Development/Public Relations-Community Affairs Director for a Children's Hospital; Fashion Merchandising/Magazine-Retail Buyer; Textiles/newspapers-Textile industry associations; Foods and Nutrition/Telecommunication Arts-Producer for TV shows on nutrition and diet; Housing/newspapers-non-profit housing associations.

Entrance Requirements

Entrance requirements include documentation of career goals and completion of Core Areas A, D, and E with a minimum GPA of 2.8.

Admission to the University of Georgia is not a guarantee of admission to the Consumer Journalism major. More students usually apply than are accepted. Applications must be submitted to Housing and Consumer Economics. Applications for admission will be accepted up to the second Friday of fall and spring semesters.

Expectations of Transfer Students

Students transferring into the Consumer Journalism major should have fulfilled the core curriculum requirements, including those under social science, humanities, English, and science. Students should have also completed microeconomics and a social science class in anthropology, sociology, or psychology.

Program Requirements

Semester Core Curriculum — **Hours**

Areas A-E: 42
See Core Curriculum
Required courses in Area A: ENGL 1101, 1102, and MATH 1101
Preferred course in Area C: SPCM 1100

Area F: 18
CHFD 2100; FDNS 2100; HACE 2100; TXMI 2100
Choose 6 hours from any of the major focus areas. Preferred courses for each major focus area are listed:

Child and Family Development
CHFD 2950-2950L; CSCI 1100-1100L; foreign language

Clothing and Textiles
ACCT 2101, 2102; CSCI 1100-1100L or MIST 2090; LEGL 2700; MATH 2200, 2200L

Consumer Economics
ACCT 2101, 2102; CSCI 1301-1301L; ECON 2105, 2106; LEGL 2700; MATH 1113, 2200, 2200L, PSYC 1101; SOCI 1101; STAT 2000

Consumer Foods
BIOL 1104, 1104L or 1108-1108L; (CHEM 1212, 1212L) or (CHEM 2100, 2100L) or (CHEM 2211, 2211L); PSYC 1101; SPCM 1100 or 1500; STAT 2000, 2210

Fashion Merchandising
ACCT 2101; ARTS 2000; CSCI 1100-1100L; ECON 2105 or 2106; SOCI 1101

Housing
ACCT 2101, 2102; CSCI 1301-1301L; ECON 2106; LEGL 2700; MATH 1113, 2200, 2200L, 2210, 2210L; PSYC 1101; SOCI 1101; STAT 2000

Major Requirements: 60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Criminal Justice

Degree
Bachelor of Arts (A.B.)

Contact Person
Susette M. Talarico, Ph.D.
Director of Criminal Justice Studies
talarico@arches.uga.edu
(706) 542-7079

Department
Political Science
College of Arts and Sciences

Description of the Program

Criminal Justice at UGA is an undergraduate program that has been in operation since 1977. The program offers an A.B. in Criminal Justice. Criminal Justice at UGA operates as an interdisciplinary program and draws its courses from cooperating departments. These include Political Science, Psychology, Sociology and other departments in the College of Arts and Sciences. In addition to coordinating this interdisciplinary curriculum, the Criminal Justice Studies Program offers a variety of services and programs for students. These include newsletters, new major orientation meetings, career seminars, and an exchange program with selected universities in England, among others. Additionally, undergraduate student organizations offer various programs for student members (Criminal Justice Society, UGA Chapter of the National Criminal Justice Honor Society, Alpha Phi Sigma).

Career Opportunities

There are a variety of career opportunities for students who study Criminal Justice. These include but are not limited to law enforcement at the local, state or federal level, state or federal probation and parole, corporate security, juvenile services and justice, family services, criminal prosecution or defense, and institutional corrections. Please note that some of these careers may require advanced degrees (e.g., J.D.) in addition to the A.B.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F and a GPA of 2.5 or higher. Students with a minimum GPA of 2.3 may apply. Applicants with a GPA between 2.3 and 2.5 are referred to a faculty committee for review.

Expectations of Transfer Students

Potential transfer students should concentrate on core requirements before transferring to UGA and should plan to take most, if not all, major courses at UGA. When applying to transfer, students interested in criminal justice should specify pre-criminal justice/Arts and Sciences on their applications. Criminal Justice at UGA operates on a selective admissions system. Transfer students must have a full term in residence at UGA prior to application with one exception: students transferring 60 or more semester hours with a GPA of 2.5 or higher may apply during their first term at UGA.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area D: STAT 2000	
Preferred course in Area E: POLS 1101, PSYC 1101, SOCI 1101 or 1600	
Area F:	18
STAT 2000	
1000/2000-level courses in ACCT, ECON, GEOG, HIST, PHIL, POLS, PSYC, RELI, SOCI, SPCM, STAT	
Three courses in a foreign language (Spanish and Asian languages are recommended, but students are free to select the specific language.)	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Internships

All Criminal Justice majors must complete a full semester internship (POLS(SOCI) 5500, 5510, 5520) that consists of work in a criminal justice or related agency and that carries extensive academic requirements. To qualify for this mandatory internship, students must (1) have an overall GPA of 2.2 and a major GPA of 2.5; (2) have completed POLS 3600, POLS(SOCI) 3700, and SOCI 3810 with a minimum grade of C; and (3) sign a waiver of liability form.

Student Exchange Opportunities

As noted earlier, Criminal Justice Studies offers a student exchange program with selected universities in England. UGA Criminal Justice majors may spend one semester or a full academic year at Lancaster or Leicester University in England. Exchange students pay their regular UGA tuition (with all forms of scholarships and student aid except for Work Study applying) and then take courses at one of the two universities specified. Room and board costs in England are comparable to what students pay here at UGA. Students should be aware that Exchange Program credit hours do not count for UGA resident credit hours.

Minor in Criminal Justice

Contact the program for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Crop Science

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
William K. Vencill
Associate Professor and Undergraduate Coordinator
cropsoil@arches.uga.edu
(706) 542-3117

Department
Crop and Soil Sciences
College of Agricultural and Environmental Sciences

Description of the Program

Crop scientists use plants to produce food and fiber for humans and feed for animals. The program of study includes basic and applied courses that allow students flexibility in preparing for a career in the dynamic field of crop science. Elective courses in genetics, chemistry, computer science, animal sciences, botany, economics, business, engineering, entomology, plant pathology, and other areas are available.

Many courses in the crop science major include laboratories in which students obtain experience related to their course work. A special problems course in crop and soil science awards academic credit for experience in research. Leadership training is provided through the Agronomy Club and other campus activities.

Career Opportunities

Business and Industry: International seed and agricultural chemical companies employ crop scientists as technical, research, marketing, sales, and information specialists. Many crop scientists are also employed by regional and local agricultural firms as production and marketing managers, land use experts, quality control specialists, and information and computer analysts.

Public service: Federal, state, and local agencies employ crop scientists in numerous technical, information, and regulatory agencies such as the Agricultural Extension Service, Natural Resources Conservation Service, Environmental Protection Agency, State Environmental Agencies, Public Health Service, Forest Service, Agricultural Statistics Service, Peace Corps and the Foreign Agriculture Service. Crop scientists also are employed as teachers and researchers in community colleges and universities.

Self-employment: Many crop scientists are self-employed producers of field crops, livestock, fruits, and vegetables. Crop scientists are seed and agricultural supply dealers, consultants for soil and plant uses, and brokerage and contract agents for agricultural products.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Incoming transfer students must have a minimum 2.3 GPA.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred course in Area C: SPCM 1100 (take under general electives if not taken in Area C)	
Preferred courses in Area D: BTNY 1210, 1210L and (CHEM 1211, 1211L) and (MATH 2200, 2200L) or STAT 2000	
Area F:	18
BTNY 1220, 1220L; CHEM 1212, 1212L; CHEM 2100, 2100L or 2211, 2211L; CRSS 2010-2010L; PHYS 1111-1111L or 1211-1211L	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Numerous opportunities for financial assistance are available. These include the Georgia Crop Improvement Association scholarship; Georgia Seedsmen's Association Roy C. Jones Scholarship; J. Frank McGill "Up with Peanuts" Scholarship; Agronomy Club Scholarships; Georgia Ag Chem Society Scholarship; Georgia Chapter American Society of Agronomy Scholarship; Georgia Association of Conservation District Supervisor's Scholarship.

Internships

Many Crop Science students obtain valuable training and experience through internships available from industry and public sector. Internships provide practical experience in crop sciences, and students may arrange to receive course credits for internships. Part-time or full-time internships may be arranged with experiment stations, businesses, industries, or government agencies. Scientists in the Department of Crop and Soil Sciences offer work-study opportunities to students to assist in research.

Minor in Crop Science

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Dairy Science

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Henry E. Amos
Professor and Undergraduate Coordinator
hamos@arches.uga.edu
(706) 542-1852

Department
Animal and Dairy Science
College of Agricultural and Environmental Sciences

Description of the Program

The thriving dairy industry in Georgia is an important segment of the agricultural economy. The modern industry requires personnel trained in business, economics, and management as well as the traditional dairy science courses. Courses of a more basic nature may be emphasized by students who desire careers in science-related fields or who wish to pursue graduate or professional study. This major is highly recommended for persons planning to enter a program of study in veterinary medicine.

Career Opportunities

The curriculum in dairy science prepares the student for a career in dairy farm operation as a manager or owner; in sales of equipment, animal health products or feed; in field services with processing plants, feed manufacturers, breed associations, and marketing agencies; in college research and teaching; as county extension agents, vocational agriculture teachers, or research technicians.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students should have taken the following courses: BIOL 1107-1107L, 1108-1108L; CHEM 1211, 1211L, 1212, 1212L; Organic Chemistry; MATH 1113.

Special Requirements

Students must have an overall 2.0 GPA in major courses.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E: See Core Curriculum *Required courses in Area A*: ENGL 1101, 1102, and MATH 1113 *Preferred course in Area C*: SPCM 1100 (take under general electives if not taken in Area C) *Preferred courses in Area D*: BIOL 1107-1107L, CHEM 1211, 1211L, and either CSCI 1100-1100L, MATH 2200, 2200L, or PHYS 1111-1111L or STAT 2000	42
Area F: ADSC 2000-2000L, 2010, 2010L; BIOL 1108-1108L; CHEM 1212, 1212L; CHEM 2100, 2100L or 2211, 2211L	18
Major Requirements For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	60
Total hours required	**120**

Scholarships

Scholarships are available to Dairy Science majors through both the College of Agricultural and Environmental Sciences and the Animal and Dairy Science Department.

Internships

All Dairy Science majors are required to complete an internship as a part of the undergraduate program requirements.

Minor in Dairy Science

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Dance Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Mark Wheeler
mwheeler@arches.uga.edu
(706)542-4415

Department Name
Department of Dance
College of Education

Description of the Program

The dance major program is grounded in studio course work in dance technique, with a 28 semester hour requirement in ballet and modern dance and a nine semester hour requirement in jazz, tap, ballroom, improvisation, and world dance forms. Complementing the program's technique component is a range of courses which employ dance as a vehicle for study of the human body, the creative process, musical form, the history of world cultures, psychology, educational theory and practice, and technical design for the stage and for multi-media formats. The curriculum enables dancers to develop technical proficiency and choreographic ability; gain experience in performance, production, and teaching; explore the scientific, philosophical, and historical foundations of dance; consider the relationship of dance to other art forms; experience the power of dance as an educational tool; and encounter dance as a total theatre experience.

An in-depth description of the program is available from the department or at http://www.coe.uga.edu/dance.

Career Opportunities

The dance major program prepares its graduates to pursue careers as performers and choreographers for the concert and theater stage and for film, video and other media; dance educators in schools K-12; teachers in and owners of private studios; arts administrators and advocates; and dance therapists. The program instills in its graduates a resourcefulness which assists them in creating for themselves a means of livelihood in the economically challenging field of dance.

Students wishing to teach dance in Georgia's public and other accredited schools grades K-12 must complete the 120 semester hour degree program along with an additional 9 semester hours of coursework in education and a 9 semester hour student teaching experience. The B.S.Ed. program in dance, along with the 18 semester hours noted above, fulfill all requirements within certification guidelines established by the Department of Education for the State of Georgia. Students from outside Georgia who wish to teach in the schools of their home states find that certification requirements vary little from state to state.

Entrance Requirements and Expectations of Transfer Students

Incoming freshmen and transfer students are required to audition for admission to the dance major program. Interested dancers may contact the Department of Dance at (706) 542-4415 for information on annual auditions occurring in November and January. The audition process is separate from students' admissions applications to the Office of Admissions.

To transfer to the dance degree program from another institution or from another UGA degree program, a student must have completed Core Areas A-E and Area F and possess an overall GPA of 2.3. An overall GPA of 2.5 is required for school certification. Due to the technical performance demands of the program and to the rotation of required course work, some junior transfers should expect to spend three years studying in the dance major program. Highly proficient dancers transferring with credit for required studio and theory courses from other college/university dance programs might be able to fulfill all degree requirements two years after transferring.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
Choose eight hours from DANC 1650*, 1660*	
Choose four hours from DANC 2650*, 2660*	
Choose six hours from DANC 2000, 2300, 2600	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Dance majors audition for Lucy Lampkin Dance Scholarships and for the FRIENDS OF DANCE Senior Scholarship to assist with tuition and other school expenses. The Young Choreographer's Series Scholarship, awarded to dance majors distinguishing themselves in YCS productions, and the Cynthia Jarvis Memorial Scholarship for Summer Study in Dance assist students with costs associated with study in accredited summer dance study programs around the world.

Internships

Students working to complete State of Georgia requirements for school certification in dance fill one-semester-hour teaching internships and nine-semester-hour student teaching internships in public and private schools K-12 throughout the state.

Minor in Dance Education

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Dietetics

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Dr. Joan Fischer
Associate Professor
jfischer@fcs.uga.edu
(706) 542-7983

Department
Foods and Nutrition
College of Family and Consumer Sciences

Description of the Program

Optimum food and nutrient intake plays a critical role in disease prevention and health maintenance. There is an increasing demand for professionals in the field of dietetics who can provide quality food and nutrition care services to individuals and groups. The mission of the Didactic Program in Dietetics is to prepare students for successful careers in dietetics and encourage students to assume leadership roles in their profession and in society. The dietetics major is a Didactic Program in Dietetics approved by the Commission on Accreditation/Approval for Dietetics Education (CAADE) of the American Dietetic Association. Upon completion of the Didactic Program in Dietetics, students must complete a supervised practice program, such as a CAADE-accredited dietetic internship, to become eligible to take the registration examination for dietitians.

Career Opportunities

The field of dietetics offers many opportunities related to foods and nutrition in health care, management, education, business and industry settings. Clinical dietetics positions are available in hospitals, clinics, health maintenance organizations, long-term care facilities, and private practice. Other opportunities include management of food or nutrition care services in health care facilities, schools or restaurants; public health nutrition; research and/or education in universities, medical centers, and government agencies.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E; completion of Area F with grades of C or better; and completion of CHEM 1211, 1211L and BIOL 1103, 1103L or 1107-1107L with grades of C or better.

Expectations of Transfer Students

Students who have completed two years of college work and are planning to transfer into this major should be aware of the following requirements: preferred courses taken as part of the core include statistics, psychology, fundamentals of speech communication, biology, and freshman chemistry. Students should complete the equivalent of BIOL 1103, 1103L or 1107-1107L and CHEM 1211, 1211L with a grade of C or better. Entrance to the major requires completion of Area F core requirements for the dietetics major with a grade of C or better in each of the courses. *Note:* General chemistry courses should be equivalent to CHEM 1211, 1211L and 1212, 1212L and the organic chemistry course should be equivalent to CHEM 2211, 2211L.

Special Requirements

To receive a B.S.F.C.S. in dietetics, a student must have at least a C grade in CHEM 1211, 1211L, BIOL 1103, 1103L, in all Area F courses, and in all major courses.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred course in Area C: SPCM 1100	
Preferred courses in Area D: CHEM 1211, 1211L, BIOL 1103, 1103L or 1107-1107L, and STAT 2000 or 2210	
Preferred courses in Area E: ANTH 1102 and PSYC 1101	
Area F:	18
BIOL 1104, 1104L or 1108-1108L; CBIO 2200-2200L; CHEM 1212, 1212L, 2211, 2211L; CHFD 2100 or HACE 2100	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Drama

Degree
Bachelor of Arts (A. B.)

Contact Person
Mr. B. Don Massey
Undergraduate Coordinator
bdonm@peachnet.campuscwix.net
(706) 542-2097

Department Name
Drama and Theater
College of Arts and Sciences

Description of the Program

Students majoring in Drama will pursue the A.B. degree which is designed to offer a liberal arts education with an emphasis in drama. After satisfying a basic core of drama courses, the student may concentrate in acting, design, or writing.

Career Opportunities

Graduates with degrees in Drama frequently attend graduate school in a wide range of fields, including drama and theatre, business, law, telecommunications, and other people-related disciplines. Drama produces students who are well-rounded people with a wide range of abilities, people who are comfortable working as a team, people who can think on their feet, analyze situations thoroughly, communicate effectively, and produce excellent results under pressure. These are precisely the kinds of abilities employers in business and industry look for in an employee.

Entrance Requirements and Expectations of Transfer Students

Entry to the major requires completion of Core Areas A-E and Area F.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: Choose one course from the following: DRAM 2120 or 2130	
Preferred courses in Area E: PSYC 1101 and either GEOG 1125 or ANTH 1102	
Area F: Two semesters of a foreign language A second 1000/2000-level literature course A 1000/2000-level fine arts course from ARHI, ARTS, or MUSI Choose one 1000/2000-level course each from two of the following areas: HIST; CLAS or CMLT; PHIL or RELI	18
Major Requirements For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	60
Total hours required	**120**

Minor in Drama

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Early Childhood Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Freida Thornton
Program Specialist/Partnership Liaison
freida@arches.uga.edu
(706) 542-4244

Department
Elementary Education
College of Education

Description of the Program

This program provides extensive field experiences and a broad educational background to teach a variety of subjects in the early grades. Students must be admitted to Teacher Education before entering Block I (see criteria for admission to Teacher Education). In order to move from one block to the next, students must complete all block courses with at least a grade of C, and maintain the 2.75 GPA required by Early Childhood for admittance to Teacher Education.

A second option, the Prekindergarten through Second Grade Emphasis, begins a cohort every third semester. For information about this option, please contact the program coordinator, Dr. Julia Reguero de Atiles, (706) 542-4244, jatiles@hestia.fcs.uga.edu.

Career Opportunities

Graduates are certified to teach all subjects in grades P-5. A passing score on Praxis II is required for certification.

Entrance Requirements

Entrance requirements include the following: completion of Core Areas A-E and Area F, a passing score on Praxis I, completion of Area F and pre-professional courses with grades of C or better, a cumulative and overall GPA of 2.75, documentation of 50 hours of pre-professional experience, submission of a pre-professional portfolio, and fewer than 12 hours of course work remaining outside of block courses. Students will be ranked by overall GPA for available slots.

Expectations of Transfer Students

Students must transfer into The College of Education as "unspecified." See "Entrance Requirements."

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum	42

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Preferred courses in Area C: Foreign language

Preferred course in Area D: MATH 1113 or STAT 2000

Preferred course in Area E: PSYC 1101

Area F:	18
Four hours of foreign language; CHFD 2950-2950L or EPSY 2020; EDIT 2010; EFND 2030; MATH 1060; SPED 2000	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Ecology

Degree
Bachelor of Science (B.S.)

Contact Person
Dr. Jim Richardson
Adjunct Research Professor
rainforestry@earthlink.net
(706) 542-6036

Department
Institute of Ecology
College of Environment and Design

Description of the Program

Ecology, the study of organisms and their environment, is an interdisciplinary science. Ecologists work at the interface of basic science fields such as biology, geology, chemistry, and mathematics, and may draw more broadly on subjects such as economics, public policy, environmental law, anthropology, and geography. There is a growing need to understand how organisms and the environment interact and to examine the influence of humans on the earth and its biodiversity.

This degree is designed mainly to prepare undergraduates for advanced graduate studies in ecology or allied applied disciplines leading to a Masters or Doctoral degree. Students planning to finish their studies at the B.S. level should discuss this with an advisor as soon as possible to design an appropriate program of study.

Students may elect to expand their experience through study abroad programs, internships with the Institute of Ecology or other sponsors, or independent research opportunities. These activities are strongly encouraged but are not required for the degree.

Career Opportunities

Many students completing this major will elect to enter graduate programs in Ecology or allied fields. Employment opportunities exist with consultant or environmental businesses that provide environmental services to local communities or industries. We see substantial opportunities in this sector of the economy, and encourage students to include appropriate broadening courses in their curriculum. These include writing and speaking skills as well as experience in conflict resolution.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students should complete the science foundation courses for the major which include a year of general chemistry, mathematics courses through integral calculus, a year of biology and, if possible, organic chemistry. Students with this background will be ready to immediately enroll in major classes.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Area F:	18
BIOL 1108-1108L; CHEM 1212, 1212L; MATH 2210, 2210L; PHYS 1111-1111L, 1112-1112L	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Internships

Students can receive credit (ECOL 4940) for approved internship experiences. Contact Professor Richardson for details.

Economics

Degrees
Bachelor of Arts (A.B.), Bachelor of Business Administration (B.B.A.)

Contact Person
Joanna Rainbow
jrainbow@terry.uga.edu
(706) 542-1311

Department
Economics
Terry College of Business

Description of the Program

Economics is the study of resource allocation by individuals, business enterprises, and nations. A social science, it forms the foundation for understanding the various business disciplines. Its study combines analytical, empirical, and historical methods to reveal how an economy functions. This department offers a wide range of courses providing students with both breadth and depth in the subject. Economics gives a valuable preparation for careers in corporate, governmental, and consulting positions within the United States and internationally. It is an excellent major for those planning to attend law school; those contemplating an MBA degree will find that such programs consider economics majors highly desirable applicants. The field also prepares students for work in public administration, international business, and financial analysis.

Career Opportunities

Economics majors find employment in a variety of public and private sector positions. Economics majors are also well-prepared for graduate, law, or business school programs. Those who study economics at the University of Georgia combine a broad general education with training in analytical methods and economic institutions.

Entrance Requirements and Expectations of Transfer Students

Students intending to pursue this major under the B.B.A.degree must meet the following requirements: completion of 60 semester hours, completion of Core Areas A-E, completion of Area F for the B.B.A. degree, and achievement of an overall GPA of 2.6. Students may not enroll in the Terry College of Business while on academic probation or dismissal from another college.

Students intending to pursue this major under the A.B. degree must complete Core Areas A-E and Area F and must take and pass calculus with a D or better.

Special Requirements

In addition to the UGA residence policy, B.B.A. students must complete at least 30 semester hours as students in the Terry College. Students are also expected to complete all major courses in residence.

Grades of 2.0 in the following are required for B.B.A. degree certification: ENGL 1101 and 1102 combined, major courses, business cumulative GPA, and the UGA cumulative GPA.

Program Requirements (B.B.A.)

Semester Core Curriculum	**Hours**
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)	
Preferred courses in Area D: MATH 1113 or 2200, 2200L (take under general electives if not taken in Area D)	
Preferred courses in Area E: ECON 2100 or 2200 (take under general electives if not taken in Area E)	
Area F:	18
ACCT 2101, 2102; ECON 2105, 2106; LEGL 2700; MIST 2090	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Program Requirements (A.B.)

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area D: MATH 1113 (take under general electives if not taken in Area D)	
Area F:	18
ECON 2105, 2106; MATH 2200, 2200L; STAT 2000; foreign language through the third semester	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

English

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Rosemary Franklin
(706) 542-2258

Department
English
College of Arts and Sciences

Description of the Program

An A.B. in English emphasizes critical thinking, articulate self-expression, and a broad knowledge of English and American Literature, language history and usage, and the critical contexts that help us to interpret our own age as well as others. Although the program encourages breadth and variety, it also offers ample opportunity for intensive study of particular interests, such as linguistics or creative and technical writing.

A grade of C or better must be achieved in all major courses.

Career Opportunities

English is an excellent pre-professional major, whether the goal be study in law, medicine, or literature. Graduates also find professions in public relations, management positions, technical writing, publishing, and any career that demands writing, interpretation and solution of problems, and clear analytic thinking.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Freshman Placement Test

All entering freshmen must take the departmental placement test. Performance on this test places a student in ENGL 1101 or 1102. A student placing in 1102 exempts 1101 with 3 hours credit. Exemption of 1101 or a grade of C or better in 1101, and a combined average of C (2.0) in 1101 and 1102, are both required for graduation.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
Choose two courses in the same foreign language (compentency through fourth semester)	
Choose one course from ENGL 2310, 2320, 2330, 2340, 2400	
Choose a second course from ENGL 2310, 2320, 2330, 2340, 2400 or a course from CMLT 2210, 2111, 2212, 2220	
Choose six hours from ARHI 2100; ARTS 2000, 2050; CLAS 1000, 1010, 1020; CLAS (LING) 2010; DRAM 2000, 2120; HIST 2051, 2111, 2112, 2301, 2302, 2701, 2702; HIST(AFST) 2052; LING 2100; MUSI 2020, 2080; PHIL 1000, 1500, 2200, 2400; RELI 1001, 1002, 1003, 2004, RELI (AFAM) 2005	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in English

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

English Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Carol Spurgeon
Undergraduate Advisor
(706) 542-4517

Department
Language Education
College of Education

Description of the Program

This program prepares a student for a professional four-year certificate in Georgia for teaching English in grades 7-12. Students must apply for this restricted major. Requirements and prerequisites in the teaching field should be considered in choosing courses in the freshman and sophomore years. All prospective teachers should plan their program with their advisor. To enter the final teacher preparation program, students must have an overall GPA of 2.6. In addition, a 2.6 GPA must be maintained during the teaching program.

If there are more applicants for the Advanced Professional Education Course Sequence (APECS) than can be accommodated, admission will be determined by the date the applicant declared English Education as his or her major. Students who are delayed because of their late date of declaration will have priority for spaces the next time courses are offered.

Career Opportunities

Graduates are certified to teach English in grades 7-12 in the public schools of Georgia.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F; a passing score on Praxis I; an overall GPA of 2.6; submission of a one-page purpose statement; and submission of a resume documenting work experience relevant to a career in education, extracurricular activities, and academic awards and honors.

Special Requirements

Students in this major must maintain a 2.6 overall GPA, maintain a 2.6 teaching field GPA, and complete 6 of 8 teaching field courses before entering APECS.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	

Area F:	18
SPCM 1100 or 1500; EFND 2030; EPSY 2020	
One semester of foreign language (1110 or above preferred)	
Choose two courses from ENGL 2310, 2320, 2330, 2340, 2400	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Entomology

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
John All
Professor
jall@bugs.ent.uga.edu
(706) 542-7589

Department
Entomology
College of Agricultural and Environmental Sciences

Description of the Program

World-wide, insects destroy about one-third of the food and fiber we produce, and they transmit some of the most devastating pathogens of plants and animals. On the other hand, insects pollinate many valuable food and forest crops, significantly increase the productivity of soils, and are important components in most food chains. A graduate in entomology should have a strong background in general biology and an understanding of the scientific method. Students learn to identify insects and other arthropods and study the biology and ecology of pests and beneficial insects in order to manage them efficiently. They should acquire a basic knowledge of agricultural production principles and how insects influence crop production. Students should also become knowledgeable about the effects of abiotic and biotic factors on insect development, population growth, species interactions, physiological requirements, and insect behavior.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Career Opportunities

Career opportunities are available for entomology graduates in industry, extension, consulting, and public research, including university laboratories and experiment stations, state and federal departments of agriculture, and the U.S. Public Health Service. A graduate will also be prepared to enter a program leading to the M.S. and Ph.D. degrees.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: BIOL 1107-1107L or BTNY 1210, 1210L, CHEM 1211, 1211L, and MATH 2200, 2200L	
Area F:	18
BIOL 1108-1108L; CHEM 1212, 1212L; CHEM 2100, 2100L or 2211, 2211L	
Choose 6 hours from BTNY 1220, 1220L; CHEM 2212, 2212L; GEOG 1112, 1112L, 1113, 1113L; GEOL 1121, 1121L, 1122, 1122L; MATH 2200, 2200L, 2210, 2210L; PHYS 1111-1111L, 1112-1112L, 1211-1211L, 1212-1212L; STAT 2000, 2210	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Departmental scholarships include the P.W. Fattig Scholarship and the Georgia Entomological Society Scholarship; contact the department for information. College-wide scholarships are also available. For more information, contact the Office of Academic Affairs in the College.

Internships

Internships are available but not required.

Environmental Economics and Management

Degree
Bachelor of Science in Agriculture (B.S.E.S.)

Contact Person
Steven C. Turner
Associate Professor and Undergraduate Coordinator
sturner@agecon.uga.edu
(706) 542-0852

Department
Agricultural and Applied Economics
College of Agricultural and Environmental Sciences

Description of the Program

The environmental economics and management

(EEM) major prepares students for public and private positions in natural and environmental resource analysis and management. EEM majors are trained to understand and appreciate the noneconomic aspects of resource and environmental problems, including social, ecologic, physical, and legal considerations. EEM majors can serve effectively as members of interdisciplinary teams involved in resource and environmental management, planning, and analysis. An EEM major is designed for individuals who desire to "make a difference" when it comes to wise, efficient, and productive management of public and private natural and environmental resources.

Career Opportunities

The linkages between economic activity and natural and environmental resources will be a major local, national, and global concern in the coming decades. Natural resource and environmental problems create a demand for individuals who can offer alternative solutions to these problems. Government job opportunities currently include management, planning, and analysis positions with federal, state, and local government agencies. Private company opportunities include similar positions with utility companies, banks, consulting firms, and resource management companies. An EEM major also provides an excellent foundation for work on an advanced degree in natural resource and environmental management. An advanced degree may lead to a teaching, research, or public service career at a college or university, law school, or a position with a private research company.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area C: SPCM 1100 or 1500 (take under major electives if not taken in Area C).	
Preferred courses in Area D: CHEM 1211, 1211L, BIOL 1107-1107L or BTNY 1210, 1210L, and MATH 2200, 2200L (take under general electives if not taken in Area D)	
Area F:	18
AAEC 2580 or ECON 2106; STAT 2000; MATH 2110, 2210 or 2210L; 6 to 7 hours of 1000/2000-level electives; excess hour from Area D	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Several scholarships are available to environmental economics and management majors through the College of Agricultural and Environmental Sciences and the Agricultural and Applied Economics Department. Information about these scholarships can be obtained from Steven Turner (sturner@agecon.uga.edu). For information about college-wide scholarships, contact the Office of Academic Affairs in the College.

Internships

Internships are available, but not required, for students pursuing the environmental economics and management major.

Environmental Health

Degree
Bachelor of Science in Environmental Health (B.S.E.H.)

Contact Person
Dr. Marsha Black
Associate Professor and Undergraduate Coordinator
mblack@uga.edu
(706) 542-2454

Department
Environmental Health Science
College of Agricultural and Environmental Sciences

Description of the Program

Environmental health scientists are in demand by private industries, consulting firms, governmental agencies, and institutions. A wide range of opportunities for employment exist in corporate environmental and occupational health departments, public health agencies, solid and hazardous waste management, general sanitation engineering, and pollution control. Environmental health scientists are employed in programs of water and air pollution control, industrial hygiene, occupational health and safety, and a variety of other activities by a significant number of agencies and commercial concerns.

The need for environmental health scientists in Georgia is increasing and employment opportunities for academically qualified personnel are increasing proportionately. The demand for trained environmental health scientists, however, is not restricted to the state of Georgia. Due to the limited availability of college training programs for this field, numerous other states rely upon the resources of the University of Georgia for graduates in this subject matter area. Students successfully completing the program of study receive the Bachelor of Science in Environmental Health (B.S.E.H.) degree. Students may pursue their interests in the areas of environmental protection, industrial hygiene, or public health. The degree program is nationally accredited and is the only undergraduate environmental health program in Georgia. A dual degree program is offered with Biological and Agricultural Engineering which allows a student to earn both the B.S.E.H. degree and the Bachelor of Science in Biological Engineering (B.S.B.E.) simultaneously in a five-year course of study.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F and a minimum 2.3 cumulative grade point average.

Expectations of Transfer Students

A minimum 2.3 grade point average is required for students who transfer into the program. The decision for admission to the EHS program is made by an EHS faculty committee and is based on the student's qualifications and availability of space and resources.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: CHEM 1211, 1211L, BIOL 1107-1107L, STAT 2000 (take under general electives if not taken in Area D)	
Area F:	18
BIOL 1108-1108L; CHEM 1212, 1212L, 2211, 2211L; CBIO 2210-2210L; PHYS 1111-1111L	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Scholarships include the Rowe Award and the John J. Sheuring Scholarship. College-wide scholarships are also available. For more information, contact the Office of Academic Affairs in the College of Agricultural and Environmental Sciences.

Internships, Cooperative Education

All environmental health students are required to complete an internship or co-op as a part of the Undergraduate Program Requirements.

Environmental Soil Science

Degree
Bachelor of Science in Agriculture (B.S.E.S.)

Contact Person
William K. Vencill
Associate Professor & Undergraduate Coordinator
cropsoil@arches.uga.edu
(706) 542-3117

Department
Crop and Soil Sciences
College of Agricultural and Environmental Sciences

Description of the Program

Environmental soil scientists are in demand by governmental agencies, private industry, consulting firms and institutions. Opportunities for employment exist in various specialized programs within public agencies, such as the Environmental Protection Agency and the Natural Resource Conservation Service, in such areas as land disposal of hazardous and other industrial and agricultural wastes, water pollution control, and soil conservation. The need for environmental scientists in Georgia and the nation is increasing rapidly with a proportional increase in employment, promotional, and professional opportunities for academically qualified personnel.

Career Opportunities

Business and industry: International seed and agricultural chemical companies employ environmental soil scientists as technical, research, and information specialists. Regional and local agricultural firms also employ many environmental soil scientists as land use experts, quality control specialists, and information and computer analysts. Environmental consulting firms employ environmental soil scientists to assess environmental conditions, monitor soil and water pollutants, reclaim disturbed lands, and prepare environmental policy.

Public service: Federal, state, and local agencies employ environmental soil scientists in numerous technical, information, and regulatory agencies such as the Agricultural Extension Service, Natural Resources Conservation Service, Environmental Protection Agency, State Environmental Agencies, Public Health Service, Forest Service, Agricultural Statistics Service, Peace Corps and the Foreign Agriculture Service. Environmental soil scientists also are employed as teachers and researchers in community colleges and universities.

Self-employment: Many environmental soil scientists are self-employed as consultants for soil and plant uses, and to assess environmental conditions, monitor soil and water pollutants, reclaim disturbed lands, and prepare environmental policy.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: BTNY 1210, 1210L, CHEM 1211, 1211L, and MATH 2200, 2200L (take under general electives if not taken in Area D)	
Area F:	18
CHEM 1212, 1212L, 2100, 2100L; GEOL 1250-1250L; PHYS 1111-1111L; STAT 2000 or 2210	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Numerous opportunities for financial assistance are available. These include the Georgia Plant Food Educational Society J. Fielding Reed Scholarship; Georgia Association of Conservation District Supervisors Ladies Auxiliary; Agronomy Club Scholarship; Georgia Chapter American Society of Agronomy; Frederick B. Smith Soil Science Scholarship; and Georgia Association of Conservation District Supervisor's Scholarship. Also, college-wide scholarships are available. For more information, contact the Office of Academic Affairs in the College.

Internships

Environmental Soil Science students are required to complete an internship as a degree requirement. Internships provide environmental soil science students with valuable training and experience through industry and the public sector.

Minor in Environmental Soil Science

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Exercise and Sport Science

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Priscilla Carter
Academic Advisor
pcarter@arches.uga.edu
(706) 542-5050

Department
Exercise Science
College of Education

Description of the Program

The undergraduate major in Exercise and Sport Science is designed to provide students an in-depth exposure to the scientific basis of physical activity, exercise and sport. Knowledge and skills related to exercise and sport biomechanics, physiology, psychology, epidemiology, physical fitness and conditioning, measurement theory, and other associated areas are obtained through prescribed and elective course work, independent study, and laboratory and field experience. All majors take 60 semester hours of liberal arts education (University Core), including science, mathematics, social science, and humanities, and 23 semester hours of exercise science courses (EXRS Core), including exercise physiology, scientific principles of conditioning and fitness, biomechanics, exercise and sport psychology, measurement, and exercise epidemiology. An additional 30 semester hours of elective course work and practical experiences are selected based on the students academic interests and career goals. Recommendations for elective course work are available for the following seven program options: Athletic Training, Fitness Specialist, Pre-Physical Therapy, Pre-Graduate Study in Biomechanics, Pre-Graduate Study in Exercise Physiology, Pre-Graduate Study in Exercise and Sport Psychology, and Pre-Graduate Study in Measurement.

Athletic Training Program

The Athletic Training program is an emphasis within the Exercise and Sport Science major. The Commission on Accreditation on Allied Health Education Programs (CAAHEP) accredits the Athletic Training Program. The program prepares students to take the NATA Board of Certification examination and to gain employment in an athletic training or sports medicine setting. The program is designed to develop cognitive and psychomotor skills and clinical proficiency related to risk management and injury prevention, assessment and evaluation of injuries, acute care, general medical conditions and disabilities, pathology of injury/illness, pharmacological aspects of injury/illness, nutrition, therapeutic exercise, therapeutic modalities, professional development and responsibilities, and health care administration. Student education occurs in course instruction and in a variety of clinical experiences. Admission to the Athletic Training program is selective and competitive. See the department for admission criteria and a program application. Courses specific to the Athletic Training emphasis are as follows: EXRS 2100, 2470, 3100, 3110, 3240, 3910, 4100, 4110, 4120, 4130, 4910, 4920; HPRB 1710; FDNS 2100.

Career Opportunities

The major prepares students for a variety of possible careers in allied health occupations, fitness and sport enterprises, athletic training, education, sport science and coaching, or business and industry. With a B.S.Ed. degree, positions can be obtained as exercise and sport science specialists in various settings (corporation, hospital, sport medicine clinic, YMCA, community recreation, government, military, sport team). Many graduates go on to graduate or professional schools majoring in sport medicine (physical therapy, athletic training, or other medical specialties) or specialized areas of exercise science (adult fitness and cardiac rehabilitation, exercise physiology, exercise psychology, biomechanics, and measurement). Following advanced study and/or certification, positions may be obtained as physical therapists, athletic trainers, sports medicine physicians, higher-level exercise specialists or directors of cardiac rehabilitation and adult fitness programs in hospital, corporate, YMCA and community settings, and as exercise scientists (teaching and/or research) in higher education, government or industry.

Entrance Requirements and Expectations of Transfer Students

Entrance requirements include completion of Core Areas A-E and Area F; completion of CHEM 1211, 1211L, CHEM 1212, 1212L, CBIO 2200-2200L, CBIO 2210-2210L, and PHYS 1111-1111L with a grade of C or better; an overall GPA of 2.75; and submission of a statement of purpose.

Special Requirements

Exercise Science core courses must be taken in residence and graded C or above to count for graduation.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum *Required courses in Area A*: ENGL 1101, 1102, and MATH 1101 *Preferred course in Area C*: PHIL 1500 and (SPCM 1100 or 1500) *Preferred courses in Area D*: BIOL 1107-1107L, 1108-1108L, and MATH 1113 (take under general electives if not taken in Area D) *Preferred course in Area E*: PSYC 1101 (take under general electives if not taken in Area E)	42
Area F: CBIO 2200-2200L, 2210-2210L; CHEM 1211, 1211L; CHEM 1212, 1212L; PHYS 1111-1111L	18
Major Requirements For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	60
Total hours required	**120**

Fees

There is a special $35 per semester fee for EXRS 3470, Practicum in Athletic Training.

Internships

Internship opportunities in physical therapy, athletic training, adult fitness or cardiac rehabilitation are available with corporations, hospitals, clinics, commercial fitness facilities or community programs in the state of Georgia and nationally.

Family and Consumer Sciences Education

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Dr. Helen Hall
hchall@arches.uga.edu
(706) 542-1682

Department
Leadership and Lifelong Learning
College of Education

Description of the Program

The major in family and consumer sciences education is offered jointly by the College of Family and Consumer Sciences and the College of Education. Students completing this program fulfill the requirements for a teacher's certificate in home economics.

Career Opportunities

Family and consumer sciences education graduates teach middle and high school students to improve the quality of life for individuals and families. A graduate might teach courses in nutrition, parenting, child care/elder care, clothing/apparel design and construction, single and family living, interior design, food service occupations, and/or consumer education. Graduates are also employed as extension agents and are hired by businesses to market food and food preparation equipment, consult on home or clothing design, and advise on family resource management or child development. Graduates with advanced degrees may be employed by colleges and universities.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Recommended courses: Chemistry sequence, psychology, economics, foundations of education, human development and the educative process, and computer technology.

Program Requirements

Semester Core Curriuculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: SPCM 1100	
Preferred courses in Area D: CHEM 1110, 1110L	
Preferred courses in Area E: ECON 2106 and PSYC 1101	
Area F:	18
EFND 2030; EPSY 2020; FDNS 2100; HACE 2100; TXMI 2100; choose one course from ECON 2106; PSYC 1101; SPCM 1100	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fashion Merchandising

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Mrs. Betty Etters
Lecturer
betters@fcs.uga.edu
(706) 542-4884

Department
Textiles, Merchandising and Interiors
College of Family and Consumer Sciences

Description of the Program

The curriculum combines business studies with the technical, scientific, and aesthetic factors associated with marketing apparel and textile products. The program emphasizes the skills and competencies needed for careers in retailing, buying, wholesaling, merchandising and promotion. Computer skills are an integral part of the program and an excellent computer center is located in Dawson Hall.

Career Opportunities

Graduating students have exciting employment opportunities as buyers, store managers, fashion directors, entrepreneurs, merchandise managers, sales representatives, and special events coordinators with leading retailers.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students transferring into the Fashion Merchandising major should have fulfilled the core curriculum requirements, including macro or microeconomics, psychology, sociology, speech, statistics, elementary chemistry, English, literature, and introduction to computing. Elementary chemistry and statistics must be taken as general electives if not taken in the core.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area D: CHEM 1110, 1110L and STAT 2000	
Preferred courses in Area E: PSYC 1101, SOCI 1101	

Area F: 18

ACCT 2101; ARTS 2000; CHFD 2100 or HACE 2100; CSCI 1100-1100L or MIST 2090; ECON 2105 or 2106; SPCM 1100

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Internships

Internships are available on a competitive basis, but not required. They are an important part of many students' programs of study. Internships are offered summer and fall semesters.

Finance

Degree
Bachelor of Business Administration (B.B.A.)

Contact
Amy Baron
Administrative Coordinator
abaron@terry.uga.edu
(706) 542-3655

Department
Banking and Finance
Terry College of Business

Description of the Program

The study of finance develops an understanding of financial decisions made by corporations and how capital markets work. Students are provided with the skills and knowledge to value cash flows and assets, analyze the financial performance of firms, determine strategies to enhance the value of the firm, and understand financial innovations in domestic and international capital markets.

The program combines course work in financial management, investment analysis, financial institutions and markets, and international finance to prepare students for positions with major corporations, small business firms, brokerage firms, commercial banks, investment banks, insurance companies, other financial institutions, accounting and consulting firms, and government agencies.

Students are expected to complete course work in financial management, investment analysis, and international finance.

Career Opportunities

Management training positions in various nonfinancial firms as well as financial services firms such as banks, brokerage firms, insurance companies, etc.; investment banking, retail brokerage; finance positions in small firms.

Entrance Requirements and Expectations of Transfer Students

Students intending to pursue this major must meet the following requirements: completion of 60 semester hours, completion of Core Areas A-E, completion of Area F for the B.B.A. degree, and achievement of an overall GPA of 2.6. Students may not enroll in the Terry College of Business while on academic probation or dismissal from another college.

Special Requirements

In addition to the UGA residence policy, B.B.A. students must complete at least 30 semester hours as students in the Terry College. Students are also expected to complete all major courses in residence.

No finance student is permitted to repeat a major finance course more than once in order to achieve a grade of C or better, nor is a finance student permitted to repeat more than two major finance courses.

Grades of 2.0 in the following are required for B.B.A. degree certification: ENGL 1101 and 1102 combined, major courses, business cumulative GPA, and the UGA cumulative GPA.

Program Requirements

Semester Core Curriculum **Hours**

Areas A-E: 42

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)

Preferred courses in Area D: MATH 1113 or 2200, 2200L (take under general electives if not taken in Area D)

Preferred courses in Area E: ECON 2100 or 2200 (take under general electives if not taken in Area E)

Area F: 18

ACCT 2101, 2102; ECON 2105, 2106; LEGL 2700; MIST 2090

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Internships

Finance students can earn three hours credit by completing an internship with a firm or with a government agency and preparing an in-depth research paper relating to banking or finance. Students are responsible for contacting the firm or agency and setting up the internship, which can be paying or non-paying, and must be at least a 30-hour work week. No other courses may be taken for credit at the same time.

Fisheries and Aquaculture

Degree
Bachelor of Science in Forest Resources (B.S.F.R.)

Contact Person
Bruce C. Bongarten
Associate Dean
bongarte@smokey.forestry.uga.edu
(706) 542-4284

Department
School of Forest Resources

Description of the Program

The Fisheries and Aquaculture major provides an education that meets the Professional Certification requirements recommended by the American Fisheries Society. This includes "... a broad understanding of the aquatic environment, the functioning of individual animals and their populations, the role of users of aquatic resources..." as well as "... competence in oral and written communication, an ability to work well with others, and an understanding of natural resource conservation in the context of other human activities." The curriculum is field oriented and offers opportunities to participate in faculty research projects and agency internships.

Career Opportunities

Graduates most often take employment in the public agencies, private aquaculture ventures, environmental consulting firms, or conservation organizations. Detailed descriptions of the diverse career opportunities in fisheries and aquaculture are available from the Office of Undergraduate Programs.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F and an overall GPA of 2.5.

Admission to the Professional Program

Entry to the major requires admission to the Warnell School of Forest Resources in addition to admission to the University of Georgia. Application forms for admission to the Warnell School of Forest Resources are available from the Associate Dean's office. Students may apply for fall or spring semester admission. A maximum of 60 students will be admitted each semester. Applications for fall semester admission are due April 1. Applications for spring semester admission are due September 15. *(Note that these deadlines may be earlier than University of Georgia application deadlines).* To be eligible for admission to the Professional Program, students must have completed the 60 hour pre-Professional curriculum, except that up to 8 credits of electives (and/or SPCM 1100) may be deferred if an equal number of credits have been completed from the following courses: ECOL 3260-3260L (Wildlife and Fisheries and Aquaculture majors only), FORS 3010-3010L, FORS 3020-3020L, and CRSS(FORS) 3060-3060L. For information on the admissions process, see the Warnell School of Forest Resources section of this Bulletin.

Expectations of Transfer Students

Entry to the major requires admission to the Warnell School of Forest Resources in addition to admission to the University of Georgia. Admission to the major is not granted until the 60 credit pre-Professional Program is completed. Transfer students should contact the Associate Dean for Academic Programs, Warnell School of Forest Resources, for information on pre-Professional Program requirements and confirmation of transfer credit.

Special Requirements

The Fisheries and Aquaculture major requires 125 semester credits, 65 in the Professional Program and 60 in the pre-Professional Program.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: BIOL 1107-1107L, CHEM 1211, 1211L, and MATH 2200, 2200L (take under major electives if not taken in Area D)	
Preferred course in Area E: ECON 2106 (take under major electives if not taken in Area E)	
Area F: BIOL 1108-1108L; CHEM 1212, 1212L, 2211, 2211L; SPCM 1100; STAT 2000	18
Major Requirements For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	65
Total hours required	**125**

Fees

Tuition in the Professional Program is approximately 10% greater than for non-Professional programs.

Scholarships

In addition to the financial assistance offered through the University's Office of Student Financial Aid, a number of scholarships and awards are available specifically for undergraduate students in forest resources. These awards total about

$80,000 annually, and are made possible by donations from forest-related industries and organizations, and from alumni and other interested individuals.

Selection for these scholarships is based on academic achievement, leadership ability, and financial need. To be considered for most scholarships, students must have a resume on file in the Office of Undergraduate Programs. A few scholarships require a separate application form.

Internships and Cooperative Education

An active internship program gives students opportunity to supplement their classroom studies with practical experience in forest resource management. Students may work with private companies, landowners, conservation organizations, and federal and state agencies.

The school also offers a Cooperative Education Program with federal and state agencies such as the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Georgia Department of Natural Resources. Students may alternate semesters of off-campus work with semesters of on-campus study. Although we make every effort to facilitate cooperative education, the arrangement for such programs is usually left to student initiative.

Food Science

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Robert Shewfelt
Professor and Undergraduate Coordinator
shewfelt@arches.uga.edu
(706) 542-5136

Department
Food Science and Technology
College of Agricultural and Environmental Sciences

Description of the Program

Food Science combines a knowledge of science, technology, and engineering to solve problems of food production, processing, packaging, distribution, preparation, evaluation, and use. Therefore, instruction in the food science major emphasizes the principles of biology, chemistry, engineering, and other sciences as they relate to foods and the conversion of raw materials into processed foods. During the first two years, students take courses in chemistry, biochemistry, microbiology, physics, mathematics, and statistics. During the junior and senior years, food science majors take required course work in addition to approved electives to allow specialization in preparing for careers. Science electives are ideal for students who wish to enter graduate or professional programs, such as veterinary medicine. Advanced degrees provide additional opportunities for career development in industry, teaching, and government. Technology electives offer more practical training in production and allows graduates with experience to move into managerial or supervisory positions in many aspects of food industry. Food Engineering electives are best for students who want the skills required to work in food process engineering or development. Graduates who combine their technical knowledge and skills with business find excellent opportunities in technical sales, consulting, or management in the food industry.

Career Opportunities

Students completing the food science major have received excellent training and experience appropriate for employment in the world's largest and most diverse industry. Food scientists develop new foods and new ways to use them, such as converting inexpensive soybeans, fish meal, or single-cell proteins into nutritious and tasty foods. They also check the safety of ingredients and food processing methods. By applying their knowledge of chemistry, microbiology, engineering, and other sciences, they test foods for flavor, color, texture, and nutrition. Career opportunities are available in industry, education, and government agencies. Food science graduates are involved in research and development work, processing, packaging, quality control, marketing, consulting, teaching, writing or enforcing government regulations, and jobs dealing with foreign trade.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Courses recommended for transfer students include calculus, statistics, general chemistry, organic chemistry, biology and physics.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1113

Preferred course in Area C: SPCM 1100 (take under general electives if not taken in Area C)

Preferred courses in Area D: BIOL 1107-1107L, CHEM 1211, 1211L, and MATH 2200, 2200L (take under general electives if not taken in Area D)

Area F: 18

BIOL 1108-1108L; CHEM 1212, 1212L, 2211, 2211L; PHYS 1111-1111L; STAT 2000

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships

Food science majors may be eligible for scholarships provided by the Food Science Scholarship Fund, which is made up of contributions from food industries and alumni. Scholarships are also available from the Institute of Food Technologists, the College of Agricultural and Environmental Sciences and the University of Georgia. For more information about college-wide scholarships, contact the Office of Academic Affairs.

Internships

Internships with food companies are available and encouraged to provide a well-rounded education.

Minor in Food Science

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Foreign Language Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Carol Spurgeon
Undergraduate Advisor
(706) 542-4517

Department
Language Education
College of Education

Description of the Program

This program prepares a student for a professional four-year certificate in Georgia for teaching French, German, Latin, or Spanish in grades P-12. Students must apply to this restricted major. Requirements and prerequisites in the teaching field should be considered in choosing courses in the freshman and sophomore years. All prospective teachers should plan their program with their advisor. Only students who have met the entrance requirements are eligible to apply for the program.

Career Opportunities

This program prepares students to teach French, German, Latin, or Spanish in grades P-12 in the public schools of Georgia.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F; a passing score on Praxis I; an overall GPA of 2.6; an overall GPA of 3.0 for all Area F courses; submission of a resume documenting relevant work experiences, skills, and abilities; and submission of a statement of purpose.

Special Requirements

Students in this major must maintain a 2.6 overall GPA, maintain a 2.6 teaching field GPA, and complete 6 of 9 teaching field courses before entering TE courses.

Program Requirements

Semester Core Curriculum **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Area F: 18

EFND 2030; EPSY 2020; SPCM 1100 or 1500

Select three of the following based on major language: FREN 2001, 2002, 3010; GRMN 2001, 2002, 3001; LATN 2001, 2002, 3010; SPAN 2001, 2002, 3010

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Forest Environmental Resources

Degree
Bachelor of Science in Forest Resources (B.S.F.R.)

Contact Person
Bruce C. Bongarten
Associate Dean
bongarte@smokey.forestry.uga.edu
(706) 542-4284

Department
School of Forest Resources

Description of the Program

The Forest Environmental Resources major emphasizes assessment, conservation, and rehabilitation of the soil, water, wetland, and endangered species components of the natural landscape. The core curriculum is broad-based, furnishing a comprehensive understanding of the physical and biological elements of the natural environment, an appreciation of the social, political, and economic forces that influence natural resources policy decisions, and the ability to analyze natural resources problems to forge realistic solutions. Students in this major choose one of three Areas of Emphasis: (1) Soils, which fulfills the educational requirements for Certified Soil Scientist by the American Soil Science Society, (2) Water Resources, which provides course work required for certification by the American Institute of Hydrology in general hydrology, groundwater hydrology or water quality, or (3) Environmental Assessment, which focuses on governmentally regulated environmental assets, including wetlands, water quality, and rare and endangered species.

Career Opportunities

Graduates frequently take employment with environmental consulting firms, public regulatory agencies, corporations that utilize natural resources or conservation organizations. Detailed descriptions of the diverse career opportunities in forest environmental resources are available from the Office of Undergraduate Programs.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F and an overall GPA of 2.5.

Admission to the Professional Program

Entry to the major requires admission to the Warnell School of Forest Resources in addition to admission to the University of Georgia. Application forms for admission to the Warnell School of Forest Resources are available from the Associate Dean's office. Students may apply for fall or spring semester admission. A maximum of 60 students will be admitted each semester. Applications for fall semester admission are due April 1. Applications for spring semester admission are due September 15. *(Note that these deadlines may be earlier than University of Georgia application deadlines).* To be eligible for admission to the Professional Program, students must have completed the 60 hour pre-Professional curriculum, except that up to 8 credits of electives (and/or SPCM 1100) may be deferred if an equal number of credits have been completed from the following courses: ECOL 3260-3260L (Wildlife and Fisheries and Aquaculture majors only), FORS 3010-3010L, 3020-3020L, and CRSS(FORS) 3060-3060L. For information on the admissions process, see the Warnell School of Forest Resources section of this Bulletin.

Expectations of Transfer Students

Entry to the major requires admission to the Warnell School of Forest Resources in addition to admission to the University of Georgia. Admission to the major is not granted until the 60 credit pre-Professional Program is completed. Transfer students should contact the Associate Dean for Academic Programs, Warnell School of Forest Resources, for information on pre-Professional Program requirements and confirmation of transfer credit.

Special Requirements

The Forest Environmental Resources major requires 123-126 semester credits: 63-66 in the Professional Program and 60 in the pre-Professional Program.

Joint Bachelor's/Master's Degree Program

Forest Environmental Resource majors may apply for entry to the School's graduate program at the end of the junior year, allowing them to complete both B.S.F.R. and M.F.R. degrees in five years. To be eligible for this program, students must have a 3.0 or greater overall GPA, a 3.2 or greater GPA in their major courses, and a combined score of 1000 or more on the verbal and quantitative sections of the Graduate Record Exam.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: BIOL 1107-1107L, CHEM 1211, 1211L, and MATH 2200, 2200L (take under major electives if not taken in Area D)	
Preferred course in Area E: ECON 2106 (take under major electives if not taken in Area E)	
Area F:	18
BIOL 1108-1108L; CHEM 1212, 1212L; CHEM 2211, 2211L or PHYS 1111-1111L; SPCM 1100; STAT 2000	
Major Requirements	61-66
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**121-126**

Fees

Tuition in the Professional Program is approximately 10% greater than for non-Professional programs.

Scholarships

In addition to the financial assistance offered through the University's Office of Student Financial Aid, a number of scholarships and awards are available specifically for undergraduate students in forest resources. These awards total about

$80,000 annually, and are made possible by donations from forest-related industries and organizations, and from alumni and other interested individuals.

Selection for these scholarships is based on academic achievement, leadership ability, and financial need. To be considered for most scholarships, students must have a resume on file in the Office of Undergraduate Programs. A few scholarships require a separate application form.

Internships and Cooperative Education

An active internship program gives students opportunity to supplement their classroom studies with practical experience in forest resource management. Students may work with private companies, landowners, conservation organizations, and federal and state agencies.

The school also offers a Cooperative Education Program with federal and state agencies such as the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Georgia Department of Natural Resources. Students may alternate semesters of off-campus work with semesters of on-campus study. Although we make every effort to facilitate cooperative education, the arrangement for such programs is usually left to student initiative.

Forestry

Degree
Bachelor of Science in Forest Resources (B.S.F.R.)

Contact Person
Bruce C. Bongarten
Associate Dean
bongarte@smokey.forestry.uga.edu
(706) 542-4284

Department
School of Forest Resources

Description of the Program

Forestry is the profession of sustainably managing forest lands to meet society's demands for wood, clean water, wildlife habitat, recreation, conservation of forest flora and fauna, and climate amelioration. The nationally accredited Forestry curriculum provides a firm understanding of forest ecosystems, the way people view and utilize the forest, and management tools and concepts applied in forest management. The curriculum stresses "hands-on" field experience, teamwork, and developing critical thinking skills through problem analysis. Options (Areas of Emphasis) within the Forestry major include (1) forest management, (2) forest business, (3) forest recreation, (4) forest biology, (5) urban forestry, (6) forest policy, and (7) wood products.

Career Opportunities

Graduates frequently take employment in the region's dynamic forest products industry, with forestry or environmental consulting firms, or with public land management agencies. Detailed descriptions of the diverse career opportunities in forestry are available from the Office of Undergraduate Programs.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F and an overall GPA of 2.5.

Admission to the Professional Program

Entry to the major requires admission to the Warnell School of Forest Resources in addition to admission to the University of Georgia. Application forms for admission to the Warnell School of Forest Resources are available from the Associate Dean's office. Students may apply for fall or spring semester admission. A maximum of 60 students will be admitted each semester. Applications for fall semester admission are due April 1. Applications for spring semester admission are due September 15. *(Note that these deadlines may be earlier than University of Georgia application deadlines).* To be eligible for admission to the Professional Program, students must have completed the 60 hour pre-Professional curriculum, except that up to 8 credits of electives (and/or SPCM 1100) may be deferred if an equal number of credits have been completed from the following courses: ECOL 3260-3260L (Wildlife and Fisheries and Aquaculture majors only), FORS 3010-3010L, FORS 3020-3020L, and CRSS (FORS) 3060-3060L. For information on the admissions process, see the Warnell School of Forest Resources section of this Bulletin.

Expectations of Transfer Students

Entry to the major requires admission to the Warnell School of Forest Resources in addition to admission to the University of Georgia. Admission to the major is not granted until the 60 credit pre-Professional Program is completed. Transfer students should contact the Associate Dean for Academic Programs, Warnell School of Forest Resources for information on pre-Professional Program requirements and confirmation of transfer credit.

Special Requirements

The Forestry major requires 125 semester credits, 65 in the Professional Program and 60 in the pre-Professional Program.

Joint Bachelor's/Master's Degree Program

Forestry majors may apply for entry to the School's graduate program at the end of the junior year, allowing them to complete both B.S.F.R. and M.F.R. degrees in five years. To be eligible for this program, students must have a 3.0 or greater overall GPA, a 3.2 or greater GPA in their major courses, and a combined score of 1000 or more on the verbal and quantitative sections of the Graduate Record Exam.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: BIOL 1107-1107L , CHEM 1211, 1211L, and MATH 2200, 2200L (take under major electives if not taken in Area D)	
Preferred course in Area E: ECON 2106 (take under major electives if not taken in Area E)	
Area F:	18
BIOL 1108-1108L; CHEM 1212, 1212L; SPCM 1100; STAT 2000; three hours of elective	
Major Requirements	65
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**125**

Fees

Tuition in the Professional Program is approximately 10% greater than for non-Professional programs.

Scholarships

In addition to the financial assistance offered through the University's Office of Student Financial Aid, a number of scholarships and awards are available specifically for undergraduate students in forest resources. These awards total about $80,000 annually, and are made possible by donations from forest-related industries and organizations, and from alumni and other interested individuals.

Selection for these scholarships is based on academic achievement, leadership ability, and financial need. To be considered for most scholarships, students must have a resume on file in the Office of Undergraduate Programs. A few scholarships require a separate application form.

Internships and Cooperative Education

An active internship program gives students opportunity to supplement their classroom studies with practical experience in forest resource management. Students may work with private companies, landowners, conservation organizations, and federal and state agencies.

The school also offers a Cooperative Education Program with federal and state agencies such as the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Georgia Department of Natural Resources. Students may alternate semesters of off-campus work with semesters of on-campus study. Although we make every effort to facilitate cooperative education, the arrangement for such programs is usually left to student initiative.

French

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Doris Kadish
(706) 542-1075

Department
Romance Languages
College of Arts and Sciences

Description of the Program

Students majoring in French will take courses that combine the study of literature, language, culture, and linguistics, which will lead to a development of language proficiency and an understanding of the French-speaking world.

Career Opportunities

Many students majoring in French will become teachers or go on to graduate school, but proficiency in a foreign language also helps majors find employment in the public and private sectors.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Placement Test

A student continuing a language taken in high school must take either the language achievement test of the College Entrance Examination Board or the placement test administered by the University of Georgia Counseling and Testing Center. Students will be placed in the appropriate course on the basis of their scores and other pertinent information. The Advanced Placement examinations in French Language and Literature may also be submitted for placement and possible credit.

Expectations of Transfer Students

Four courses or 14 semester hours of beginning and intermediate French language course work, equivalent to UGA FREN 1001-2002, are required. Study abroad courses can be used to fulfill part or all of these prerequisites, upon permission of advisors in the department.

Special Requirements

A minimum grade of C is required in course work for this major.

No student may receive credit for any course which is a prerequisite to a course for which college credit has already been received. Exceptions may be made only by the head of the department.

Certain courses in the Department of Romance Languages are not open to native speakers of that language. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was French, Italian, Portuguese, or Spanish.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum *Required courses in Area A*: ENGL 1101, 1102, and MATH 1101	42
Area F: FREN 2001, 2002, LING 2100 Choose nine hours from the following: AFST (ANTH) (CMLT) (GEOG) (HIST) (SOCI) 2100; ARHI 2100; CLAS 1000, 1010, 1020; CMLT 2210, 2220; DRAM 2000, 2120; ENGL 2310, 2320, 2400; FREN 1001, 1002; HIST 2301, 2302, 2502; ITAL 2500, 2600; MUSI 2020; PHIL 1000; PORT 2600; RELI 1001, 1002, 1003; ROML 2550; SPAN 2550; WMST 1110-1110D, 2010; 1000/2000-level courses in another language; 1000/2000-level foreign language study abroad courses	18
Major Requirements For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	60
Total hours required	**120**

Study Abroad

The Department of Romance Languages encourages all students to participate in an accredited study abroad program for an academic year, a semester, or the summer. Prior departmental approval is required for credit. Contact the Office of International Education (542-7903) for information about programs. Check with the department for the maximum number of hours that will count for a major or minor.

Minor in French

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Furnishings and Interiors

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Ms. Linda Tepfenhart
Lecturer
ltepfenhart@fcs.uga.edu
(706) 542-4914

Department
Textiles, Merchandising and Interiors
College of Family and Consumer Sciences

Description of the Program

The Furnishings and Interiors curriculum combines drafting classes with historic studies to explore rendering, color, perspective, architecture, interiors, furniture and decorative arts. The program emphasizes the skills and competencies needed for careers in furnishings and interiors. Computer skills are focused on the curriculum. An excellent computer center in the College is readily accessible to students.

Career Opportunities

Exciting employment opportunities are available in architectural/design firms, as sales representatives for textiles, furniture, and lighting; kitchen and bath designers; and designers of historic reproductions.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F, CHEM 1110 and 1110L, an overall GPA of 2.3, completion of ARST 1050 in Area F with a grade of C or better, and submission of an application and a portfolio of work from ARST 1050.

Expectations of Transfer Students

Entrance to the Furnishings and Interiors program requires approval through an application and portfolio review (see www.fcs.uga.edu/tmi; click on Academic Programs and then Furnishings and Interiors or contact the department for deadline dates for portfolio review and an application packet). In addition, transfer students must complete elementary chemistry as a general elective if not taken in core requirements.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum *Required courses in Area A*: ENGL 1101, 1102, and MATH 1101	42

Preferred courses in Area C: EDES 2510 or 2520
Preferred courses in Area D: CHEM 1110, 1110L and STAT 2000
Preferred courses in Area E: PSYC 1101
Area F: 18
ARST 1050, 1060; ARTS 2000; CHFD 2100 or HACE 2100; CSCI 1100-1100L; SPCM 1100
Major Requirements 60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Internships

Internships are available on a competitive basis, but not required. They are an important part of many students' programs of study.

Genetics

Degree
Bachelor of Science (B.S.)

Contact Person
Dr. Sidney Kushner
skushner@arches.uga.edu
(706) 542-1440

Department
Genetics
College of Arts and Sciences

Description of the Program

The Genetics Department was formed in 1980 and currently consists of 20 faculty members reflecting a diverse yet complementary range of research interests. The undergraduate major in genetics was established in 1983 and started out with only 20 students. As of spring 1999, there were 125 genetics majors. In addition to taking a challenging series of required courses, genetics majors are encouraged to participate in research projects conducted in individual faculty members' laboratories. The average GPA of graduating genetics majors since inception of the program is 3.40.

For more information about the Genetics Department and the major in genetics, consult the Department's web site at http: //www. genetics. uga.edu.

Career Opportunities

The genetics major provides a strong base for biological science-oriented careers. Ninety percent of genetics graduates go on to pursue advanced degrees in research and/or medicine.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students should complete undergraduate biology, inorganic and organic chemistry, and biochemistry in preparation for transferring to the genetics major.

Program Requirements

Semester Core Curriculum **Hours**
Areas A-E: 42
See Core Curriculum
Required courses in Area A: ENGL 1101, 1102, and MATH 1113
Preferred courses in Area D: BIOL 1107-1107L and CHEM 1211, 1211L and MATH 2200, 2200L
Area F: 18
BIOL 1108-1108L; CHEM1212, 1212L; CHEM 2211, 2211L; CHEM 2212, 2212L; MATH 2210, 2210L
Major Requirements 60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships, Internships

Research assistant positions are occasionally available for undergraduates in the laboratories of genetics faculty members. The Genetics Department sponsors a "Summer Undergraduate Fellowships in Genetics (SUNFIG)" program. Under- represented minority students are especially encouraged to apply.

Minor in Genetics

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Geography

Degrees
Bachelor of Arts (A.B.), Bachelor of Science (B.S.)

Contact Persons
Dr. Andrew J. Herod
Senior Advisor and Advisor for A.B. Students, last names A-K
aherod@arches.uga.edu
(706) 542-2856

Dr. Ikubolajeh Logan
Advisor for A.B. Students, last names L-Z
nadissa@arches.uga.edu
(706) 542-2856

Dr. Lynn Usery
Advisor for B.S. Students
usery@arches.uga.edu
(706) 542-2856

Department
Department of Geography
College of Arts and Sciences

Description of the Program

The major in geography requires at least 24 hours of geography courses at the 3000-4000 level and must include GEOG 3510-3510L. A minimum grade of C must be earned in each course. For the A.B. degree, 3000-4000-level course work in the major must include 6 hours of human geography courses, 3 hours of physical geography courses, and 12 additional elective hours in geography; at least 6 hours must comprise 4000-level courses in human geography or techniques. For the B.S. degree, 3000-4000-level course work in the major must include 6 hours of physical geography courses, 3 hours of human geography courses, and 12 additional elective hours in geography; at least 6 hours must be 4000-level courses in physical geography or techniques.

Career Opportunities

The breadth of geography as a discipline together with the flexibility of the undergraduate program allows students to tailor their coursework to suit the needs of a wide range of employers in business, government, and education. Opportunities in the technical fields of geographic information systems and mapping sciences continue to grow rapidly (see details of the interdisciplinary undergraduate certificate program in Geographic Information Sciences). Opportunities remain strong in location analysis, regional development, urban planning, environmental assessment, and atmospheric and earth sciences. For more details, contact the Undergraduate Advisor.

Entrance Requirements and Expectations of Transfer Students

Students intending to enter the geography major should complete Areas A-F of the core curriculum. Preferred courses in Areas D and E are listed under Program Requirements (A.B. and B.S.), as are Area F requirements specific to each degree.

Program Requirements (A.B.)

Semester Core Curriculum — **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Preferred courses in Area D: GEOG 1111, 1111L or (1112, 1112L and 1113, 1113L) (take under general electives if not taken in Area D)

Preferred course in Area E: GEOG 1101 (take under general electives if not taken in Area E)

Area F: 18

GEOG 2300 or STAT 2000; foreign language (3rd semester)

Four courses from any of the following (not taken in Area E):

No more than two courses from the following: [AFST(ANTH) (CMLT) (GEOG) (HIST) (SOCI) 2100; GEOG 1103, 1125, 2610]; AFAM 2000; ECON 2105, 2106; PHIL 1500; SOCI 1600; WMST 2010

No more than one from the following: [fourth semester of a foreign language; one 2000-level SOCI course not listed above; one 2000-level HIST course beyond the course taken in Area E]

(If GEOG 2300 or STAT 2000 and a foreign language through the third semester have already been satisfied, students may make up their 18 hours with other courses from the above list.)

Major Requirements: 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Program Requirements (B.S.)

Semester Core Curriculum — **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1113

Preferred courses in Area D: GEOG 1111, 1111L or (1112, 1112L and 1113, 1113L) (take under general electives if not taken in Area D)

Preferred course in Area E: GEOG 1101 (take under general electives if not taken in Area E)

Area F: 18

GEOG 2300 or STAT 2000; MATH 2200, 2200L or 2210, 2210L*; CSCI 1100-1100L or 1210 or 1301-1301L; two lab science courses beyond those required under Area D in BIOL, CHEM, GEOG, GEOL, or PHYS (both courses can be from the same department)

*MATH 2210, 2210L strongly encouraged for a meteorology/climatology focus. (If the above requirements have been satisfied, students may make up their 18 hours with 1000/2000-level courses in BIOL, CHEM, CSCI, ECOL, GEOG, GEOL, MATH (2000-level), PHYS, or STAT.)

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Minor in Geography

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Geology

Degrees

Bachelor of Science (B.S.), Bachelor of Arts (A.B.)

Contact

Dr. Steve Holland or Dr. Paul Schroeder
Undergraduate Advisors
stratum@gly.uga.edu; schroe@uga.edu
(706) 542-0424; (706) 542-2384

Department

Geology
College of Arts and Sciences

Description of the Program

The undergraduate curriculum prepares students for careers in the geosciences. Course work can be selected to emphasize a variety of geoscience specialities including geophysics, geoarchaeology, sedimentary geology, paleobiology, geochemistry, geohydrology, and environmental geology.

The Department of Geology offers a newly designed curriculum that provides the undergraduate student with flexibility while still covering the basic geoscience curriculum. A required four-course sequence covers the basic concepts of earth materials, surface and internal earth processes, and the life and sedimentary environments of the earth's past. The field experience is a strong part of the undergraduate geology curriculum. All the required classes take field trips. Two courses, Field Methods and Geology Field School (taught in the summer in the Rocky Mountains of Colorado) emphasize the collection and interpretation of geologic information in the field. Electives on a variety of topics allow the student to specialize in fields of interest.

The typical undergraduate geology major continues on in a graduate program (the professional degree in geology is the masters degree). However, some undergraduates do find employment in the geosciences upon graduation. Career possibilities include work in petroleum and mineral exploration, environmental remediation, education, and various governmental agencies.

Career Opportunities

Over half of the geology undergraduates go on to do graduate study in geology. Some of these students stay at Georgia, but many go to other graduate programs. Most of the employment opportunities in the geosciences require a graduate degree. The Masters degree is considered the professional degree, the degree most often held by professional geologists. However, some entry-level jobs do exist for geoscientists with undergraduate degrees, especially if they have some prior work experience.

The employment outlook in the geosciences, as in any profession, varies with the economic climate of the country. The long-range outlook is good at this time. Dwindling energy, mineral and water resources, increasing environmental concerns, global issues such as rising sea levels, and hazard assessment present new challenges to geoscientists. Career opportunities are increasing in environmental science and hydrogeology with the growing need to maintain Earth's natural environments and meet society's demands for Earth materials.

According to the American Geological Institute's *Geoscientific Employment and Hiring Survey — 1991*, about 85,000 geoscientists work in the United States. Most earth scientists are employed by industries related to oil and gas, mining and minerals and water resources.

Many geoscientists are self-employed as geological consultants or work with consulting firms. Most consulting geologists have had extensive professional experience in industry, teaching or research.

Also, many geoscientists work for the federal or state government. Most work for the U.S. Geological Survey (Department of Interior), but others work for the Department of Energy, Forest Service, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, U.S. Army Corps of Engineers, or a state geological survey.

Salary scales vary depending on the career path, location, qualifications of the geoscientist and, of course, the economy. In the early 1990s, the range of average starting salaries for graduates with bachelor's degrees was $21,000 to $36,000. Starting salaries for master's degrees ranged from $24,000 to $38,500 and from $30,000 to $44,000 for Ph.D.'s.

Recent graduates from the Department of Geology at UGA have followed the trends outlined above. Most have been hired by consulting firms doing work on environmental problems. Some of the students have been hired in the more traditional fields of mineral and petroleum exploration. A few graduates have gone into teaching at both the high school and university level while others have gone on to work for Government organizations.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Program Requirements (A.B.)

Semester Core Curriculum **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1113

Preferred courses in Area D: BIOL 1103, 1103L, CSCI 1301-1301L, and one of the following lab science courses (the other three in Area F): CHEM 1211, 1211L, 1212, 1212L; GEOL 1250-1250L or 1121, 1121L; or GEOL 1260-1260L or 1122, 1122L (take under general electives if not taken in Area D).

Preferred course in Area E: ANTH 1102

Area F: 18

CHEM 1211 or 1411; CHEM 1211L or 1411L; GEOL 1250-1250L or (GEOL 1121, 1121L) or GEOL 2350H; GEOL 1260-1260L or (GEOL 1122, 1122L) or GEOL 2360H

Choose one course from the following: CSCI 1100-1100L, 1210; MATH 2200; STAT 2000, 2210

Choose one course from the following (not taken above): BIOL 1103, 1104, 1107-1107L, 1108-1108L; BTNY 1210, 1220; CHEM 1212, 1212L, 1412, 1412L, 2100, 2100L, 2211, 2211L, 2212, 2212L; CSCI 1100-1100L, 1210, 1301-1301L; ECOL 1000-1000L; GEOG 1112-1112L; MARS 1010-1010L, 1020-1020L; MATH 2200, 2210; PHYS 1010, 1111-1111L, 1112-1112L, 1211-1211L, 1212-1212L; STAT 2000, 2210

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Program Requirements (B.S.)

Semester Core Curriculum **Hours**

Area A-E: 42

Required courses in Area A: ENGL 1101, 1102, and MATH 1113

Preferred courses in Area D: MATH 2200, 2200L and two of the following lab science courses: CHEM 1211, 1211L, 1212, 1212L; GEOL 1250-1250L or 1121, 1121L; GEOL 1260-1260L or 1122, 1122L (take under general electives if not taken in Area D).

Preferred course in Area E: ANTH 1102

Area F: 18

Choose three of the following lab science courses not taken in Area D: CHEM 1211, 1211L, 1212, 1212L; GEOL 1250-1250L, 1260-1260L (GEOL 1121, 1121L and 1122, 1122L will be accepted to satisfy degree requirement)

Choose one from the following: Organic Chemistry; PHYS 1111-1111L

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Minor in Geology

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

German

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Martin Kagel
mkagel@arches.uga.edu
(706) 542-2446

Department
Germanic and Slavic Languages
College of Arts and Sciences

Description of the Program

The German major is designed to provide students with communicative proficiency in the German language and competency in the interpretation of German culture. Following the completion of basic requirements, the program offers optimal flexibility to the individual student who can choose from a variety of courses and, under the guidance of a faculty mentor, devise a curriculum geared towards his or her specific career goals and intellectual interests. The department is comprised of specialists in the major areas of German Studies who integrate language teaching with the teaching of German literature, linguistics, film, and culture studies as well as important aspects of contemporary German society, business, and politics.

The study of German in the United States has undergone significant changes in recent years and the German program at the University of Georgia reflects those changes by offering intermediate and advanced German courses that cover broad subject areas but generally are not literary survey or genre courses. Instead, the focus of a course may be a specific issue or a topic that students learn to investigate in depth or from a particular perspective. Through such courses students acquire the critical tools to undertake independent inquiries into the field of German and form their own questions about cultural specificity and difference. While either German literature or linguistics constitutes the core of these courses, they are frequently interdisciplinary and include materials and methods from other fields such as history, music, film, philosophy, art history, and sociology.

Although the university and the department strongly encourage study abroad and offer opportunities for its pursuit in Bamberg, Erlangen, Heidelberg, and Rostock, we recognize that many students will not be able to stay in Germany for extended periods of time during or after their course of study. The program of study is therefore not limited to analyzing specific aspects of German culture, but generally intended to sharpen students' critical skills and strengthen their ability to express themselves. It is also designed to raise students' cross-cultural awareness, to help them realize the uniqueness of their own background and understand it as socially and historically constructed.

Career Opportunities

A major in German with its twofold emphasis on linguistic proficiency and cultural competency is excellent preparation for a variety of professional careers in business, government, and academia. The comparatively small size of the department allows faculty members to pay close attention to the individual student, to help students advance in their studies, and to guide them in the pursuit of their professional career choices. Whether you are interested in a career in business, foreign service, or law, or if you are looking to become a teacher in primary or secondary education, or to pursue German as an academic subject in graduate school, there are copious ways in which you could apply your knowledge of German to the profession of your choice.

Students often choose double-majors, combining their study of German with a second field such as International Business, Finance, Political Science, Sociology, Art History, or Education. Many of our majors move on to work in various capacities for American companies that do business with Germany, or for companies based in German-speaking countries that have subsidiaries in the U.S. Knowledge of German not only helps graduates to get a job, but often is a significant factor in professional advancement. In many high-tech companies (in automotive engineering, optics, medical instrumentation, etc.) proficiency in German is highly desired.

A number of recent graduates have spent one or two years as assistant teachers of English in German high schools through a program funded by the Fulbright Commission, in order either to deepen their knowledge of German and prepare for a teaching career, or simply to broaden their professional background before embarking on another professional or academic career.

Recent graduates have also been admitted to highly esteemed Master's and Ph.D. programs in German including those at the University of Virginia, the University of Pennsylvania, Indiana and Washington University. Others have been accepted to prestigious law programs.

Entrance Requirements

Entry to the major requires completion of core Areas A-E and Area F. GRMN 2002 (or 2140H) is the prerequisite for 3010 and 3070, and all other upper-division courses taught in German have 3010 or 3070 as a prerequisite.

Expectations of Transfer Students

Students transferring as juniors must have completed four semesters of German study equivalent to UGA courses GRMN 1001-2002 before beginning upper-division work.

Special Requirements

Students must earn a minimum grade of C in each course to receive credit toward the major. No more than one directed study course (of 3 credit hours) and one upper-division GRMN course taught in English translation may count toward the major.

All upper-division courses fulfilling the major requirement must be taken in residence with the exception of a maximum of 6 hours of transfer credit earned in an approved study abroad summer program, provided that credit for GRMN 2002 (or an equivalent course) was earned before participation in the program. Transfer credit for courses taken in a year-long study abroad program and/or at a German university may be applied on a case-by-case basis.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
GRMN 2001, 2002 or 2140H, 2300; LING 2100 or 2100H	
Six additional hours preferably taken from the following areas: ANTH, ARGD, ARHI, ARID, ARST, ARTS, CMLT, DRAM, ECON, GEOG, HIST (world), LING, MUSI, PHIL, POLS, SPCM, WMST	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in German

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Germanic and Slavic Languages

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Paul Popov
ppopov@arches.uga.edu
(706) 542-2442

Department
Germanic and Slavic Languages
College of Arts and Sciences

Description of the Program

The undergraduate major in Germanic and Slavic Languages is designed to provide students with a good communicative knowledge of both the German and the Russian language and a basic insight into the culture of Germany and Russia.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F. GRMN 2002 and RUSS 2002 are prerequisites for upper-division courses.

Special Requirements

Students must earn a minimum grade of C in each course. Upper-division transfer credit from UGA-affiliated Studies Abroad Programs must be preapproved by the department.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
GRMN 2001, 2002; RUSS 2001, 2002; LING 2100	
Three hours from the following: beginning/intermediate courses in a second foreign language, art, music, theater, literature, history, geography, anthropology, economics, international studies, linguistics, philosophy, communications, and political science	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Greek

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Sarah Spence
Undergraduate Coordinator
sspence@arches.uga.edu
(706) 542-0417

Department
Classics
College of Arts and Sciences

Description of the Program

This program provides students with an opportunity to pursue studies in Greek literature, history, archaeology, art, philosophy, and religion while concentrating on the Greek language.

Career Opportunities

Career opportunities for graduates include teaching at the secondary level, non-teaching academic positions, museum work, library work, editorial work, positions in the travel and tourist industry, and government positions in foreign service. The major also prepares students to enter graduate school in classics, comparative literature, linguistics, history, and other fields (for university teaching positions). Other opportunities include careers in law, journalism, and business.

Entrance Requirements
Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students
Ideally transfer students should have completed fourth-semester Greek and courses in ancient history or classical culture.

Program Requirements
Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: CLAS 1000 and 1010 (take under general electives if not taken in Area C)	
Area F:	18
GREK 1001, 1002, 2001 (if 1001 already satisfied); CLAS 1020 or CLAS(ANTH) 2000	
Select three courses from the following: CMLT 2210; HIST 2301; LING 2100; PHIL 1500	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarship
The Warlick-Mannion Scholarship (up to $1,000 per year) is available.

Minor in Greek
Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Health and Physical Education

Degree
Bachelor of Science in Education (B.S. Ed.)

Contact Person
Dr. Rose Chepyator-Thomson, Associate Professor
Physical Education Program Coordinator
365 Ramsey Center
jchepyat@coe.uga.edu
(706) 542-5947

Department
Physical Education and Sport Studies
College of Education

Description of the Program
The major is designed to present students with research and pedagogical knowledge that will prepare them to be distinctive teachers in the nation and global society and to develop technological skills to meet the ever-changing demands of society through a variety of courses and experiences in classroom and field settings. Completion of this program prepares the student for certification to teach health and physical education grades K-12 in Georgia. A coaching minor is available for those students wishing to prepare for coaching responsibilities in schools or in the community. Students completing our program are able to pursue further study in physical education or related disciplines of they so desire.

Career Opportunities
Several career opportunities are available for graduates. Graduates can be teachers of health and physical education in schools and community organizations and can coach in many sports programs in the community if they take a minor in coaching. Currently the State of Georgia requires that schools provide 90 hours for the instruction of health and physical education each year for K-5, providing opportunities to teach at this level. The state also requires that health and physical education courses be made available to students in grades 6-12 and schools in the state offer a variety of programs for students.

Entrance Requirements
Entrance requirements include completion of Core Areas A-E and Area F, a passing score on Praxis I, and an overall GPA of 2.3 (2.5 required for admission to teacher education).

Expectations of Transfer Students
Students transferring at the junior level should have completed Areas A, C, D, E, and F in the UGA Core Curriculum. Area D (Science, Math, and Technology) should include the equivalent of CHEM 1110, 1110L and BIOL 1103, 1103L. Area E (Social Sciences) should include the equivalent of HIST 2111 or 2112 and POLS 1101. Area F (major-related courses) should include the equivalent of CBIO 2200-2200L, CBIO 2210-2210L, EPSY 2020, and EFND 2030.

Special Requirements
For degree completion, a student must be admitted to teacher education and must have at least a 2.5 overall grade point average to receive a student teaching assignment.

Program Requirements
Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	

Preferred courses in Area D: BIOL 1103, 1103L and CHEM 1110, 1110L

Area F:	18
CBIO 2200-2200L, 2210-2210L; EFND 2030; EPSY 2020; 4 hours of 1000/2000-level electives	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

The Coach Mike Castronis Scholarship, the Clifford Lewis Scholarship, and the Mary Ella Soule Scholarship are given annually to upper division students in the major.

Minor in Physical Education/Athletic Coaching

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Health Promotion and Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Ms. Katie Hein, Departmental Academic Advisor
321 Ramsey Center
khein@coe.uga.edu
(706) 542-4358

Department
Health Promotion and Behavior
College of Education

Description of the Program

Students majoring in Health Promotion and Education may choose one of two areas of emphasis: School Health or Health Promotion and Wellness. Depending on the area of emphasis, students are prepared either to work in schools with P-12 teacher certification, or to work in health promotion and wellness positions in community, health care and worksite settings.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F, a passing score on Praxis I, and and overall GPA of 2.0 (0-30 semester hrs.), 2.1 (31-60 semester hrs.), 2.2 (61-90 semester hrs.), or 2.3 (91 or more semester hrs.). An overall GPA of 2.5 is required for admission to Teacher Education.

Admission to Teacher Education

Standards for admission of freshmen to the College of Education are the same as for those admitted to the University. Enrollment in the College of Education does not constitute admission as a candidate for a degree in teacher education or professional certification in other professional fields. Each student who seeks a professional teaching degree or professional teacher certification must apply for admission to Teacher Education through the College's Educational Field Experience Office, 315 Aderhold Hall.

AREA OF EMPHASIS: SCHOOL HEALTH

Career Opportunities

A major in Health Promotion and Education in the school health area leads to P-12 teacher certification with professional employment opportunities in public and private schools, day care facilities and community agencies. The Coaching minor is also available through the Physical Education and Sport Studies Department.

Special Requirements

1) An overall 2.5 GPA is required before HPRB 3450 Practicums and HPRB 5460 Student Teaching.
2) CBIO 2200-2200L and 2210-2210L are prerequisites for EXRS 3700.
3) A student must be admitted to Teacher Education Program before enrolling in HPRB 3400 and 5460.
4) Application for Teacher Education can be made after completion of EFND 2030, SPCM 1100 or 1500, ENGL 1101 and 1102, an overall GPA of 2.5, passing of Regents test, and one semester enrolled at UGA.
5) Application for Student Teaching must be completed through Room 315 Aderhold by the end of the first week of the semester preceding student teaching.
6) A student must be certified in First Aid and CPR before student teaching. This requirement may be satisfied with ARC or AHA cards.
7) A grade of C or better is required for all courses included in the Major Requirements and the Major Electives.
8) It is recommended that all HPRB students compile and maintain a portfolio documenting and exhibiting work or experiences gained throughout the undergraduate program including the practicums and student teaching.

Internships

Practicums and student teaching assignments are arranged through the HPRB department and the College of Education. Students will consult with HPRB department Student Teaching Coordinator to initiate this process.

AREA OF EMPHASIS: HEALTH PROMOTION AND WELLNESS

Career Opportunities

Professional positions are available in public and private community agencies, business and industry, and health care facilities.

Special Requirements

1) An overall 2.5 GPA is required before enrolling in HPRB 4400 and 5560.
2) CBIO 2200-2200L and 2210-2210L are prerequisites for EXRS 3700, 4310, 4630-4360L, and 4640-4640L.
3) A grade of C or better is required for all courses included in the Major Requirements and the Major Electives.
4) First Aid and CPR certification is required. May be satisfied with ARC or AHA cards.
5) Application for HPRB 5560 Field Experience must be completed by midterm of the semester preceding the field experience in order to be cleared to register. Field Experience application packets are available from the Field Experience Coordinator.
6) It is recommended that all HPRB students compile and maintain a portfolio documenting and exhibiting work or experiences gained throughout the undergraduate program including the practicums and field experience.

Internships

Practicums and field experiences are arranged by the students in cooperation with the HPRB department Field Experience Coordinator. Paid field experiences are not to be expected.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courss in Area D: BIOL 1103, 1103L and 1104, 1104L	
Preferred courses in Area E: ANTH 1102 or SOCI 1101 and PSYC 1101	
Area F:	18
CBIO 2200-2200L, 2210-2210L; SPCM 1110 or 1500	
CSCI 1100-1100L or MIST 2090; STAT 2000 (Health Promotion and Wellness students)	
EFND 2030, EPSY 2020, and 1 hour of an elective (School Health Education students)	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

History

Degree
Bachelor of Arts (A.B.)

Contact Person
Coordinator
(706) 542-2503 or 542-2053

Department
Department of History
College of Arts and Sciences

Description of the Program

Students are encouraged to develop an understanding of history and culture of medieval as well as modern times, and to supplement this with the use of a foreign language.

Career Opportunities

Students who decide to major in history embark upon a course of study that promises both academic and professional rewards. A sound component of a liberal education, history also serves practical needs, providing a solid background for careers in law, journalism, government service, and history preservation. The history major also meets an important need of the business world by providing general training in analysis and writing, and by developing a sense of balanced judgment. For those who choose to teach history or social studies in secondary schools, the history major provides the necessary subject-matter content. Finally, the history major and especially the area of emphasis in Historical and Area Studies prepare the student not only for graduate work in history but also for other professional careers which call for a satisfactory acquisition of knowledge and skills related to the study of the past.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F. Anyone who decides to become a history major must first file a "Declaration of Major" form with the College of Arts and Sciences. The prospective major then must go to the Department of History Main Office (LeConte 220) to arrange for a meeting with the Undergraduate Advisor and fill out an advisee information card. A permanent faculty member will be assigned to the student for advisement. These steps should be taken during the last semester of the sophomore year or the first semester of the junior year. If the student is a last-semester sophomore, he or she should bring an official college check sheet to the history office. If a check sheet is not available or cannot be secured from the office of the Dean of Arts and Sciences, it is advisable to request an official transcript from the Registrar's office. New history majors, especially transfers from other colleges, should always present an official transcript of accepted courses from the University of Georgia Registrar's Office.

Expectations of Transfer Students

The major in history requires at least one 1000-2000 level history course in **each** of at least **three** of the following areas: US/North American history, Latin American history, European history, African history, Middle Eastern history, Asian history, or world history. At least 18 semester hours of course work must be taken in residence at the University of Georgia.

Special Requirements

At least 15 hours of electives for this major must be in courses numbered 3000 or above and 18-19 hours in courses at any level. A C average in history courses is required.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
One foreign language course	
Select three hours at the 1000/2000-level from the following list of humanities prefixes: ANTH, ARHI, CLAS, CMLT, GEOG, PHIL, POLS, RELI, SOCI	
An additional three hours of a foreign language or an additional three hours from the humanities list above	
At least one course in each of three of the following areas:	
U.S./North America: HIST 2111, 2111H, 2112, 2112H	
Latin America: HIST 2221, 2222	
Western Civilization: HIST 2301, 2302, 2311H, 2312H	
Africa: HIST (AFST) 2501, HIST 2502	
Middle East: HIST 2560	
Asian History: HIST 2601, 2602	
World History: HIST 2701, 2702	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarship and Awards

The Department of History makes several annual awards, including an award for the Outstanding Senior Paper (Alf Andrew Heggoy Award); an award to the outstanding junior who has demonstrated excellence in history and who has an interest in Georgia history (Joe Brown Connolly Award); and a scholarship to an outstanding junior history major (Phyllis Jenkins Barrow scholarship).

Minor in History

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Honors Interdisciplinary Studies (A.B., B.S.,B.F.A.)

Degrees

Bachelor of Arts (A.B.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.)

Contact Person

Dr. Sandra Whitney
Honors Program
117 Holmes/Hunter Academic Building
swhitney@arches.uga.edu
(706) 542-3240

Department

College of Arts and Sciences

Description of the Program

The honors interdisciplinary studies major is similar in intent and design to the interdisciplinary studies major, but is open only to Honors Program participants. For more information, see Interdisciplinary Studies.

Honors Interdisciplinary Studies (B.S.A.)

Degree

Bachelor of Science in Agriculture (B.S.A.)

Contact Person

Josef M. Broder
Assistant Dean, Academic Affairs
jbroder@agecon.uga.edu
(706) 542-1611

Department

College of Agricultural and Environmental Sciences

Description of the Program

Students may major in honors interdisciplinary studies under the Bachelor of Science in Agriculture degree. The major is administered by the College through the University Honors Program and is open only to Honors students enrolled in the College of Agricultural and Environmental Sciences. Students may pursue the honors interdisciplinary studies major in any academic department within the College. The major is available to Honors students who seek an interdisciplinary, cohesive program of study not allowed under existing disciplinary majors.

An honors interdisciplinary studies major is designed to allow an Honors student to build an integrated program in a coherently defined interdisciplinary combination of courses. The definition of area may be applied as a chronological, geographical, subject matter, or any other logical and cohesive program of study.

Career Opportunities

Students may develop their own degree program to prepare for careers as consultants, business owners, engineers, environmental protection agents, graduate students, bankers, farmers, teachers, or any other profession in agricultural and environmental sciences.

Entrance Requirements and Expectations of Transfer Students

The honors interdisciplinary studies major (HIS) is open only to Honors students enrolled in the College of Agricultural and Environmental Sciences. Students must complete Core Areas A-E and Area F and submit a program of study to be approved by the dean and the Honors Council.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: BIOL 1107-1107L or BTNY 1210, 1210L and (CHEM 1211, 1211L)	
Area F:	18
Lower division science courses related to the major, such as AAEC, ADSC, BTNY, CHEM, CRSS, CSCI, EHSC, ENGR, FDST, GENE, GEOL, HORT, PHYS, POUL, STAT	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Special Requirements

Students may complete an Honors Thesis.

Scholarships

Several scholarships are available to students in the College of Agricultural and Environmental Sciences. For more information, contact the Office of Academic Affairs in the College.

Internships

Internships are available but not required.

Horticulture

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Tim Smalley
Associate Professor and Undergraduate Coordinator
tsmalley@arches.uga.edu
(706) 542-0788

Department
Horticulture
College of Agricultural and Environmental Sciences

Description of the Program

The horticulture curriculum educates students in the application of basic principles to the propagation, culture, production, marketing, and postharvest physiology of fruits, vegetables, ornamental plants, and herbs. The curriculum has the flexibility to allow a student to select courses in turf management (the culture and management of turfgrasses on golf courses, recreational areas, and home lawns); floriculture/woody ornamentals (including the use of plants for aesthetic, therapeutic, as well as pollution abatement purposes); and fruit and vegetable production and management.

Career Opportunities

Career opportunities include management, production, marketing, or postharvest handling of vegetables, fruits, flowers, or ornamental plants; salesperson and/or technical advisor with a commercial firm; field advisor or manager of nurseries, greenhouses, parks, arboretums, botanical gardens, and garden centers; teacher in high schools or technical schools; horticultural journalist; agricultural extension agent or governmental employee. A student may select a curriculum for entrance into graduate school, which prepares for a career in horticultural research and/or teaching at the college or university level.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Courses in chemistry, biology/botany, and precalculus are desirable.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred course in Area C: SPCM 1100	
Preferred courses in Area D: (BTNY 1210, 1210L or BIOL 1107-1107L) and (BTNY 1220, 1220L or BIOL 1108-1108L), and CHEM 1211, 1211L	
Area F:	18
AAEC 2580 or ECON 2106 or STAT 2000; CHEM 1212, 1212L; ten hours of 1000/2000 electives	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Numerous general national and college scholarships and two scholarships specific to horticulture are available. For more information about college-wide scholarships contact the Office of Academic Affairs in the College.

Internships

Internships are highly recommended but not required. Numerous national and state internships are available.

Minor in Horticulture

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Housing

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Dr. Anne Sweaney
Professor and Undergraduate Coordinator
asweaney@fcs.uga.edu
(706) 542-4877

Department
Housing and Consumer Economics
College of Family and Consumer Sciences

Description of the Program

The Housing major focuses on the socio-economic aspects of housing. Special emphasis is given to housing needs and the manner in which the family, the private sector, and government policy respond to those needs. The program features an in-depth study of housing finance and the range of housing alternatives. The program may also be used as preparation for graduate study or as a pre-professional degree. Certification as a housing counselor and study in housing for the elderly are also available.

Career Opportunities

Students with a housing major are prepared for employment with local, state, and federal housing agencies, helping tenants with housing use and maintenance practices. Graduates may enter employment in real estate firms, utility companies, planning commissions, and with manufacturers of housing and housing components, including manufactured homes, kitchens, and storage units. Other sources of employment are financial institutions involved with housing loans, extension service, and property management firms. Students have an opportunity to earn a housing counselor's certificate which enables them to work with clients and families who encounter problems when buying a home.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F and a grade of C or better in HACE 2100 and ECON 2106.

Expectations of Transfer Students

Students transferring into the housing major should have fulfilled the core curriculum requirements, including social science, humanities, and English. Students should have also completed micro and macroeconomics, introductory statistics, computer science and introductory sociology, math or logic.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: SPCM 1100	
Area F:	18
ECON 2106; HACE 2100; choose 12 hours from ACCT 2101, 2102; CHFD 2100; CSCI 1301-1301L; FDNS 2100; LEGL 2700; MATH 1113, 2200, 2200L, 2210, 2210L; PSYC 1101; SOCI 1101; STAT 2000; TXMI 2100	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Housing

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Interdisciplinary Studies

Degrees
Bachelor of Science (B.S.), Bachelor of Arts (A.B.), Bachelor of Fine Arts (B.F.A.)

Contact Person
Robert L. Anderson
Dean's Office
College of Arts and Sciences.
rla@arches.uga.edu
(706) 542-3400

Description of the Program

A student with academic interests for which no suitable major is offered by any single department in the College of Arts and Sciences may pursue an Interdisciplinary Studies (IDS) major. An IDS major plans a program of study and senior thesis with a faculty advisor and an advisory committee, who are chosen by the student and the IDS Coordinator. The Interdisciplinary Studies major consists of a minimum of 24 hours of courses plus a Senior Thesis (3 hours) on a topic of special interest. The 24 hours of the major must be drawn from two or more departments of the College of Arts and Sciences. Some programs may include courses from other colleges within the University, although programs of study involving more than 9 hours outside of Arts and Sciences may require special permission.

Applicants for an IDS major must have completed 27 credit hours of college courses, but not more than 75, with a GPA of 3.0 or higher. Students must maintain at least a 3.0 average on all courses taken in order to remain as IDS majors. Programs that reflect an attempt to "pull something together" near the end of the undergraduate program or to look back and attempt to create a theme to fit courses already completed are not in keeping with the spirit of the IDS major.

The IDS program is a rigorous one that requires early planning on the student's part. The first step for students interested in an IDS major is to contact the Coordinator of the Division of Interdisciplinary Studies for further information.

Minor in Interdisciplinary Cognitive Science

Contact the Coordinator of the Division of Interdisciplinary Studies for requirements or refer to the online bulletin at www.bulletin.uga.edu.

International Business

Degree
Bachelor of Business Administration (B.B.A.)

Contact Person
Sally Vandiver
Academic Advisor
svandiver@cbacc.cba.uga.edu
(706) 542-3904

Department
International Business Programs
Terry College of Business

Description of the Program

A growing number of foreign and U.S. companies transact a significant and continually expanding portion of their business through international channels. More and more businesses are having to go abroad to find new markets as domestic markets mature. Even those corporations conducting business strictly in this country have to compete with foreign imports. As a result, major corporations that are taking advantage of international opportunities have a "competitive edge."

The Terry College of Business has designed its International Business Program to give its graduates a "competitive edge." While providing opportunities for students to gain the knowledge and skills required for international business careers, the program also assists them in developing an understanding of the mechanisms and institutions of the international economy.

The curriculum is designed to develop a broad background of knowledge in a business field as well as a strong concentration in a foreign language. In addition to the basic undergraduate business curriculum, international business majors are required to take four of the following six courses: Using Accounting Information in a Multinational Setting, the International Business Environment, International Finance, Internship or Cooperative Education, International Legal Transactions for Business, International Strategic Management, or International Marketing.

Students also choose an area of concentration in either Banking and Finance, Accounting, Real Estate, Economics, Marketing, Management, or Global Studies. The Global Studies Certificate is administered through the Center for Global Policy Studies. In this program students conduct additional research in a chosen geographic area, gaining in-depth knowledge of its culture, economics, politics, and religion.

The International Business program is the only major in the Terry College of Business requiring a foreign language sequence. Students may choose to complete a minor in a language as part of the International Business program. The final course in a language sequence must be 3000-level or above.

Many undergraduate international business majors broaden their cultural horizons and earn degree credit simultaneously by participating in various study abroad programs. By participating in these programs, students obtain firsthand knowledge of a foreign language and culture as well as develop an awareness of economic and political issues which affect commerce and characterize foreign marketplaces.

Entrance Requirements and Expectations of Transfer Students

Students intending to pursue this major must meet the following requirements: completion of 60 semester hours, completion of Core Areas A-E, completion of Area F for the B.B.A. degree, and achievement of an overall GPA of 2.8. Students may not enroll in the Terry College of Business while on academic probation or dismissal from another college.

Special Requirements

In addition to the UGA residence policy, B.B.A. students must complete at least 30 semester hours as students in the Terry College. Students are also expected to complete all major courses in residence. In some cases, with departmental permission, a student may receive transfer credit for one major course.

Grades of 2.0 in the following are required for B.B.A. degree certification: ENGL 1101 and 1102 combined, major courses, business cumulative GPA, and the UGA cumulative GPA.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)	
Preferred courses in Area D: MATH 1113 (take under general electives if not taken in Area D)	
Preferred courses in Area E: ECON 2100 or 2200 (take under general electives if not taken in Area E)	
Area F:	18
ACCT 2101, 2102; ECON 2105, 2106; LEGL 2700; MIST 2090	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Italian

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Doris Kadish
(706) 542-1075

Department
Romance Languages
College of Arts and Sciences

Description of the Program

Students majoring in Italian will take courses that combine the study of literature, language, culture, and linguistics, which will lead to a development of language proficiency and an understanding of the Italian-speaking world.

Career Opportunities

Many students majoring in Italian will become teachers or go on to graduate school, but proficiency in a foreign language also helps majors find employment in the public and private sectors.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Placement Test

A student continuing a language taken in high school must take either the language achievement test of the College Entrance Examination Board or the placement test administered by the University of Georgia Counseling and Testing Center. Students will be placed in the appropriate course on the basis of their scores and other pertinent information. Students with a knowledge of Italian should contact the department for placement.

Expectations of Transfer Students

Four courses or 14 semester hours of beginning and intermediate Italian course work, equivalent to UGA ITAL 1001-2002, are required. Study abroad courses can be used to fulfill part or all of these prerequisites, upon permission of advisors in the department.

Special Requirements

A minimum grade of C is required in course work for this major.

No student may receive credit for any course which is a prerequisite to a course for which college credit has already been received. Exceptions may be made only by the head of the department.

Certain courses in the Department of Romance Languages are not open to native speakers of that language. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was French, Italian, Portuguese, or Spanish.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
ITAL 2001, 2002; LING 2100	
Choose 9 hours from ARHI 2100; CLAS 1000, 1010, 1020; CMLT 2210, 2220; DRAM 2000, 2120; ENGL 2310, 2320, 2400; HIST 2301, 2302, 2502; ITAL 1001, 1002, 2500, 2600; MUSI 2020; PHIL 1000; PORT 2600; RELI 1001, 1002, 1003; ROML 2550; SPAN 2550; WMST 1110-1110D, 2010; 1000/2000-level courses in another language; 1000/2000-level foreign language study abroad courses	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Study Abroad

The Department of Romance Languages encourages all students to participate in an accredited study abroad program for an academic year, a semester, or the summer. Prior departmental approval is required for credit. Contact the Office of International Education (542-7903) for information about programs. Check with the department for the maximum number of hours that will count for a major or minor.

Minor in Italian

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Japanese Language and Literature

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Katarzyna Jerzak
Undergraduate Coordinator
kejerzak@arches.uga.edu
(706) 542-2148

Department
Comparative Literature
College of Arts and Sciences

Description of the Program

The program pays equal attention to the four language skills of speaking, listening, reading, and writing. Graduates should be able to read diverse Japanese texts with little external help except from dictionaries, and should also be able to express ideas about complex social and literary issues orally and in writing in grammatical Japanese.

Career Opportunities

Opportunities for graduates include graduate study, education, foreign service, and international business.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Special Requirements

Students are required to attend the computer lab regularly to practice Japanese writing.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: At least one 2000-level literature course (take under major electives if not taken in Area C)	
Area F:	18
JPNS 1001, 1002	
Two 2000-level literature courses (3 hours may be satisfied under Area C in the core)	
Remaining hours taken in courses relevant to the study of language and literature, to be selected from transferable courses in AFAM, ARTS, CHNS, CLAS, LATN, GREK, JPNS, KREN, DRAM, ENGL, GRMN, RUSS, HIST, LING, MUSI, PHIL, RELI, ROML, ITAL, PORT, SPAN, FREN, SWAH, WMST, YORB	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Japanese Language and Literature

Contact the Department of Comparative Literature for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Landscape Architecture

Degree
Bachelor of Landscape Architecture (B.L.A.)

Contact Persons
Scott S. Weinberg, Professor
Director of Resident Instruction
weinberg@arches.uga.edu
(706) 542-4715

Marsha M. Grizzle
Degree Program Specialist
mgrizzle@arches.uga.edu
(706) 542-4725

Department
School of Environmental Design

Description of the Program

The undergraduate program leading to the degree of Bachelor of Landscape Architecture includes 156 credit hours and is designed as a professional curriculum. The professional curriculum contains 96 hours of Landscape Architecture courses, which includes 8 hours of Internship and one course in surveying. During five years of study, students are progressively introduced to the complexities of environmental design through a series of graduated studio exercises. These are augmented by lecture classes on theoretical, philosophical and technical subjects. Consultants visit the School to lecture on new ideas and philosophies and students are required to participate in several prescribed field trips arranged on a class by class basis to visit important projects in the southeast. During part of the fourth year, students are required to obtain approved employment as interns with professional design offices to gain professional experience.

Career Opportunities

Landscape architecture implies a problem-solving orientation. Theoretical knowledge is applied to arrive at practical solutions in a variety of settings. In preparation for careers, students work in a professional internship. The range of professional employment includes: private landscape design and planning firms; local, state and regional park and planning agencies; and federal agencies concerned with design, planning and management of large land areas such as national forests and parks.

Entrance Requirements

There are no special entrance requirements for freshmen. Students transferring to the School from other majors inside the University and from schools other than UGA must have completed Core Areas A-E and Area F.

Expectations of Transfer Students

Recommended background preparation for transfer includes courses in botany, horticulture, engineering, graphic arts, and physical science. Students from outside the University of Georgia are strongly encouraged to begin their course of study fall semester.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area D: (BIOL 1103, 1103L or BTNY 1210, 1210L) and (ECOL 1000-1000L or GEOG 1113 or GEOL 1121) and (CSCI or MATH or STAT)	
Area F:	18
EDES 1500, 2210, 2220, 2510; ENGR 1020; LAND 2310, 2320	
Major Requirements	94-96
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**154-156**

Fees

Students are responsible for various tools and materials necessary for studio classes and for fees incurred for class field trips.

Scholarships

A number of scholarships are provided to the School of Environmental Design through the generosity of individuals, clubs and the School alumni society. These scholarships are granted based on academic performance in the School, leadership and need. The scholarships are awarded in September for the academic year. A request for applications is posted in spring semester, well in advance of the deadline. Availability of specific scholarships and amounts may vary from year to year. Students may obtain complete information regarding scholarships in 609 Caldwell Hall.

Landscape and Grounds Management

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Tim Smalley
Associate Professor & Undergraduate Coordinator
tsmalley@arches.uga.edu
(706) 542-0788

Department
Horticulture
College of Agricultural and Environmental Sciences

Description of the Program

This program is designed to educate students in the application of basic principles to the installation and management of environmentally sound landscapes, grounds, and interiorscapes. These functions include wetlands reclamation, replacement, and enhancement; minimization of the impact of agricultural chemicals on the environment; landscape waste management; and water quality and conservation in the home landscape and grounds, on the golf course, at amusement parks, commercial buildings and offices, and outdoor athletic facilities.

Career Opportunities

This major provides skills needed to own a landscape contracting or grounds management business or to work at the management level. Graduates may work for world renowned theme parks such as Disney World, beautiful public gardens such as Callaway Gardens, world renowned golf courses such as Augusta National, or well-known athletic facilities such as Sanford Stadium. Opportunities are also available in sales, government, agricultural extension, and other agencies. Graduates may continue their education in graduate school, which could lead to a research and/or teaching career at a major university or in industry.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Courses in chemistry, biology/botany, and precalculus are desirable.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E: See Core Curriculum	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred course in Area C: SPCM 1100	
Preferred courses in Area D: BTNY 1210, 1210L or BIOL 1107-1107L; (CHEM 1211, 1211L) and CSCI 1101-1101L or STAT 2000	
Area F:	18
BTNY 1220, 1220L or BIOL 1108-1108L; CHEM 1212, 1212L; ECON 2106; ENGR 1020; 5-6 hours of 1000/2000-level electives	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Numerous general national and college scholarships and two scholarships specific to horticulture are available. For more information about college-wide scholarships, contact the Office of Academic Affairs in the College of Agricultural and Environmental Sciences.

Internships

An internship is highly recommended but not required. Numerous national and state internships are available.

Latin

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Sarah Spence
Undergraduate Coordinator
sspence@arches.uga.edu
(706) 542-0417

Department
Classics
College of Arts and Sciences

Description of the Program

This program provides students with an opportunity to pursue studies in Roman literature, history, archaeology, art, philosophy, and religion while concentrating on the Latin language.

Career Opportunities

Employment opportunities include teaching at the secondary level, non-teaching academic positions, museum, library, editorial work, travel and tourist industry, government positions in foreign service, graduate school in classics, comparative literature, linguistics, history, and other fields (for University teaching positions). Other opportunities include careers in law, journalism, or business.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Ideally, transfer students should have completed fourth semester Latin, or three to four years of high school Latin and courses in ancient history or classical culture.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: CLAS 1000 and CLAS 1010 (take under general electives if not taken in Area C)	
Area F:	18
LATN 1001, 1002, 2001 (if 1001 has already been satisfied); CLAS 1020 or CLAS (ANTH) 2000	
Three courses from CMLT 2210; HIST 2301; LING 2100; PHIL 1500	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarship

The Warlick-Mannion Scholarship (up to $1,000 per year) is available.

Minor in Latin

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Law

See Pre-Law on page 293 of this Bulletin, see the School of Law on page 136, or contact the School for a copy of the *Law School Bulletin* for additional information.

Linguistics

Degree
Bachelor of Arts (A.B.)

Contact Person
Director, Linguistics Program
director@linguistics.uga.edu
706-542-5099; Fax: 706-542-2897
www.linguistics.uga.edu

Department
Linguistics Program
College of Arts and Sciences

Description of the Program

Linguistics is an interdisciplinary program whose faculty are based in many departments in the Franklin College of Arts and Sciences and in the College of Education. Its undergraduate curriculum is designed to offer students the opportunity to learn about the many different ways that human language can be studied. Linguistics is not the same as the study of many different languages, although exposure to several languages is required in Area F of the Core requirements for the major. Foundation courses teach basic concepts about speech sounds, words, and their arrangement into meaningful patterns. Linguistics at UGA offers four applied areas: Cognitive Linguistics, Second Language Acquisition, Historical Linguistics, and Language Variation/Sociolinguistics. Majors and minors must take two foundation courses, and then will select other courses to gain experience in the applied areas and to pursue their interests.

Career Opportunities

While there are no jobs waiting for Linguistics majors as there might be for engineers or nurses, employers do value the Linguistics major. Exposure to languages promises communication skills, and the technical aspects of the study of language suggest that majors will be able to cope with technical materials; technical writing is one field in which Linguistics majors are likely to find employment. Students with extensive computer training will find that Linguistics may offer them an edge for jobs in the expanding field of natural language processing and artificial intelligence. For those students who wish to continue their studies, the Linguistics major can provide a good foundation for professional programs or for graduate programs in Anthropology, Cognitive Sciences, English or another modern language, Psychology, and other fields besides Linguistics itself.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Transfer students who have taken Linguistics courses at other universities should contact the director of the Linguistics Program for evaluation and assignment of the appropriate equivalents in UGA courses.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
LING 2100; one modern foreign language through the fourth semester; two courses in non-Indo-European language (Arabic, Chinese, Hebrew, Japanese, Korean, Swahili, Yoruba, and others); additional hours to fulfill Area F from the following 1000/2000-level courses: AFST (ANTH) (CMLT) (GEOG) (HIST) (SOCI) 2100, ANTH, ARTI, CLAS, CMLT, ENGL, FREN, GEOG 1101, 1125, GREK, GRMN, ITAL, LATN, PHIL, PORT, RELI, ROML, RUSS, SPAN, SPCM, SWAH	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Linguistics

Contact the Linguistics Program for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Magazines

Degree
Bachelor of Arts in Journalism (A.B.J.)

Contact Person
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Department
Journalism
College of Journalism and Mass Communication

Description of the Program

The magazines major is designed to help students prepare for careers in magazines, specialized publications, and other employment areas which require expertise in information gathering, analysis of information, writing, and editing.

Career Opportunities

Magazine graduates typically begin their careers as reporters, writers, copy editors, or layout and design specialists.

Entrance Requirements

Applications are accepted only from students who have met minimum requirements in number of credit hours (at least 60 semester hours and satisfactory completion of Areas A-F of the Core Curriculum which includes foreign language at the second and third levels and micro or macro economics), cumulative and overall grade point averages of at least 2.5, and English proficiency (recentered SATV score of at least 650, ACTV score of at least 30 or at least 77 on an English proficiency test administered by UGA's Testing Center). Meeting *minimum* requirements assures consideration but is not a guarantee of admission.

A point system based on academic achievement and test scores determines a student's standing among other applicants. Those presenting the highest qualifications are accepted each semester of the academic year.

Expectations of Transfer Students

The academic program for the A.B.J. degree consists of two parts: Areas A-F of the core curriculum (which includes foreign language at the second and third levels and micro or macro economics) taken during the freshman and sophomore years at UGA or another institution and the professional program taken after formal admission to the College. Pre-Journalism students at the University of Georgia are enrolled in the Franklin College of Arts and Sciences.

Admission to the University of Georgia is not a guarantee of admission to the Grady College of Journalism and Mass Communication. A maximum number of spaces in each major is determined by the availability of teaching staff, classroom space, lab facilities and other resources. In reaching its decisions on how many students may be admitted each semester, the Admissions Committee is governed by the number already enrolled in each major, the number expected to graduate and the number applying. Grade point averages and test scores are the primary measures upon which admission decisions are based. It is recognized that the inclusion of talented students of diverse international and racial backgrounds is an indispensable part of the educational process and the Committee considers the need for such diversity in reaching its decisions. See Entrance Requirements

Applications must be submitted directly to the Office of Undergraduate Services, Room 201, College of Journalism and Mass Communication. The deadline is 4:00 p.m. on Friday of the second full week of classes.

Special Requirements

No more than two courses or seven semester credit hours in journalism and mass communication courses earned before admission to the GRady College, whether at UGA or another institution, may be applied toward satisfaction of requirements for the A.B.J. degree. At least 20 semester credit hours of journalism and mass communication courses which satisfy A.B.J. degree credit must be earned at the University of Georgia.

A total of 121 semester hours (including one hour of PE) must be successfully completed to earn the A.B.J. degree. At least 90 semester hours must be taken outside the Grady College, of which at least 65 must be in liberal arts and sciences courses. No more than 32 semester credit hours in journalism and mass communication courses may be applied toward requirements for the Magazines major.

A grade of C or higher must be earned in any journalism and mass communication course which counts toward satisfaction of requirements for the A.B.J. degree.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: One literature course from CLAS, CMLT, ENGL	
Preferred course in Area D: STAT 2000	
Preferred course in Area E: ANTH 1102 or GEOG 1125	
Area F:	18
Foreign language sequence through the third semester	
ECON 2105 or 2106	
Choose 9 hours of 1000/2000-level courses from ANTH, ARTS, CLAS, CMLT, DRAM, ENGL, GEOG, HIST, PHIL, POLS, PSYC, RELI, SOCI, SPCM, STAT	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Some courses may require the purchase of a supply card from the University bookstore.

Scholarships

About 30 undergraduate scholarships are administered by the Grady College each academic year. A general application submitted during the spring semester assures consideration for any of the scholarships for which the applicant is qualified.

Internships

Valuable practical experience is gained by serving internships. Although not required, internships are considered important to a student's total educational experience and greatly enhance job opportunities upon graduation. Academic credit may be earned for successful completion of an internship if:

1. Advance approval is received from the student's department. A written request must be submitted that includes a job description, length of internship, name of supervisor and rate of pay. Also, a letter verifying the internship offer must be submitted by the employer prior to the first day of the semester in which the internship is served.
2. Certain basic courses as determined by the department have been completed.
3. The internship covers a minimum number of weeks of full-time employment as determined by the department.
4. During the semester of the internship the student registers concurrently for JOUR 5010, which is included in the maximum semester hours of journalism and mass communication credit which may be earned toward the Magazines major.
5. A written report is submitted by the employer prior to the last day of the semester in which the internship is served describing the intern's duties and the quality of performance.
6. A final, written report of week-by-week activities is submitted by the student to the department prior to the last day of the semester in which the internship is served.

Management

Degree
Bachelor of Business Administration (B.B.A.)

Contact Person
Mary Lou Abbott
Academic Advisor
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(706) 542-3729

Department
Management
Terry College of Business

Description of the Program

A primary objective of the Management major is to help students develop the perspective, the skills, and the knowledge needed to manage and lead the modern organization more effectively. What makes the life of a manager so interesting is that it requires one to address such a wide variety of problems — financial, material, human, legal, political, and environmental — almost every day. No other career provides such a rich mixture of challenges. To be successful under such conditions, students must be able to work with and through groups of people toward a common end and be able to communicate with others (in both written and oral form) the mission, goals, objectives, and direction of the organization which they are chosen to lead. Further, in an increasingly complex and global business environment, students must be able to think creatively with regard to problem solving in all areas of the enterprise. The common program of study for students who are candidates for the Bachelor of Business Administration (B.B.A.) offers excellent opportunities to select course work which may well serve a variety of personal development goals in meeting the professional challenges outlined above. Within the Management major itself, the required "Management Core" (Operations, Human Resource Management, Ethics, Organizational Behavior, and Strategic Management) is designed to provide students with exposure to the central issues and competencies required for managers facing the twenty-first century.

Through appropriate selection of major elective courses, students may better prepare for career opportunities that utilize the specialized knowledge and skills offered in more specific areas, such as human resource management, association or non-profit management, operations management, or small business management.

In addition to course work, there are other means of achieving personal developmental needs for a career in management. For a complete listing, stop by the Information Desk at the Tate Center. Because managers are "joiners" and leaders, the best way to develop and demonstrate the qualities necessary for successful management is by joining and by leading whenever and wherever an opportunity occurs. Campus organizations provide just such an opportunity.

Career Opportunities

Many management majors join a major firm as management trainees. This experience prepares the new graduate for the challenges specific to a particular organization or industry and also gives senior managers the opportunity to assess a beginner's potential for higher-level leadership.

On the other hand, some students may choose to take a job with a hospital, a governmental agency, or some public sector organization, or start an entrepreneurial venture or join a family business. Others end up in such specialized areas as sales, manufacturing, purchasing, or human resource management. The career opportunities in management are limited only by a student's own dreams, aptitudes, ambition, and perseverance.

Entrance Requirements and Expectations of Transfer Students

Students intending to pursue this major must meet the following requirements: completion of 60 semester hours, completion of Core Areas A-E, completion of Area F for the B.B.A. degree, and achievement of an overall GPA of 2.6. Students may not enroll in the Terry College of Business while on academic probation or dismissal from another college.

Special Requirements

In addition to the UGA residence policy, B.B.A. students must complete at least 30 semester hours as students in the Terry College. Students are also expected to complete all major courses in residence. In some cases, with departmental permission, a student may receive transfer credit for one major course.

Grades of 2.0 in the following are required for B.B.A. degree certification: ENGL 1101 and 1102 combined, major courses, business cumulative GPA, and the UGA cumulative GPA.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)

Preferred courses in Area D: MATH 1113 or 2200, 2200L (take under general electives if not taken in Area D)

Preferred courses in Area E: ECON 2100 or 2200 (take under general electives if not taken in Area E)

Area F:	18
ACCT 2101, 2102; ECON 2105, 2106; LEGL 2700; MIST 2090	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

In addition to a wide range of scholarships available to all students regardless of major, there are several scholarships specifically available to Management majors. The T. W. Reed Scholarship is awarded annually to the junior with the highest grade point average. The Frank and Nancy Moore Scholarship is awarded each spring to a Management major who has demonstrated superior achievement both in and out of the classroom.

Internships and Cooperative Education

Internships and cooperative education opportunities are designed to give students a meaningful work experience in their chosen fields as a formal part of the academic program.

Management Information Systems

Degree
Bachelor of Business Administration (B.B.A.)

Contact Person
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(706) 542-3581

Department
Management Information Systems
Terry College of Business

Description of the Program

The Department of Management's undergraduate program in MIS is designed to educate future information systems professionals and managers. The program is not designed to train students to be computer scientists, programmers, or technicians. The emphasis is placed on the management of information systems so that graduates may ultimately assume managerial positions at the vice-presidential level. In some companies, information systems are of such strategic importance that managers with an MIS background are becoming chief executive officers.

The MIS course work offers prepares students for a variety of jobs. The program is interdisciplinary in nature with specialized training in information systems, management, and information technology. It builds on the Terry College of Business common core, which includes course work in accounting, economics, legal studies, mathematics, statistics, computer programming, finance, marketing, production, and management. The program's educational objectives are realized through a variety of instructional methods, including "hands-on" computer experience; class lecture and discussion; textbook and article study; class assignments, laboratory projects, and applied team projects in the business community; demonstrations; field trips; and presentations by MIS practitioners.

Specifically, the MIS program requires 21 hours (7 courses) of major course work beyond the TCB common core. Six courses (Computer Programming in Business, Data Management, Systems Analysis and Design, Decision Support Systems, Telecommunications and Networking, and Managing the Information System Resource) are taken by all MIS majors. The remaining major course may be chosen from such areas as Rapid Application Development, Knowledge-Based Systems, and Business Application Software.

Career Opportunities

The MIS field is widely recognized for its current and future career potential. Specific career opportunities depend on personal interests. Graduates may directly enter the MIS function and rise through the MIS ranks or become MIS specialists in a given functional area, such as production or finance, and serve as the liaison between MIS and that functional area. Some graduates go into end-user support, often working in an information center. Employment opportunities exist with such organizations as hardware vendors, software vendors, and consulting firms that provide MIS products and services. Typical entry-level positions include applications programmer, systems analyst, information analyst, and end-user support specialist.

Entrance Requirements and Expectations of Transfer Students

Students intending to pursue this major must meet the following requirements: completion of 60 semester hours, completion of Core Areas A-E, completion of Area F for the B.B.A. degree, and achievement of an overall GPA of 2.9. Students may not enroll in the Terry College of Business while on academic probation or dismissal from another college.

Special Requirements

In addition to the UGA residence policy, B.B.A. students must complete at least 30 semester hours as students in the Terry College. Students are also expected to complete all major courses in residence. In some cases, with departmental permission, a student may receive transfer credit for one major course.

Grades of 2.0 in the following are required for B.B.A. degree certification: ENGL 1101 and 1102 combined, major courses, business cumulative GPA, and the UGA cumulative GPA.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)	
Preferred courses in Area D: MATH 1113 or 2200, 2200L (take under general electives if not taken in Area D)	
Preferred courses in Area E: ECON 2100 or 2200 (take under general electives if not taken in Area E)	
Area F:	18
ACCT 2101, 2102; ECON 2105, 2106; LEGL 2700; MIST 2090	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

In addition to a wide range of scholarships available to all students regardless of major, the various companies represented on the UGA-MIS Industry Advisory Board annually award scholarships to outstanding undergraduate MIS majors.

Internships and Cooperative Education

Internships and cooperative education opportunities are designed to provide a meaningful work experience in Management Information Systems as a formal part of the academic program. Some of the organizations providing such opportunities for MIS majors include Andersen Consulting, Lotus Development Corporation, IBM, CNN Interactive, Wachovia, Citicorp Credit Services, BellSouth Telecommunications, HBO, Ernst & Young, Walt Disney World, Towers Perrin, Continental Airlines, Norfolk Southern, and Hewlett-Packard.

Marketing

Degree
Bachelor of Business Administration (B.B.A.)

Contact Person
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Department
Marketing and Distribution
Terry College of Business

Description of the Program

Marketing is an integral part of our everyday activities and experiences. It is concerned with developing, transporting, promoting, and selling the vast assortment of products and services needed to satisfy the diverse wants and needs of consumers. It is an indispensable part of business practice and a challenging field for study and research.

All marketing majors are required to take a core of courses devoted to the development of analytical skills. These required courses draw heavily upon both the behavioral and quantitative sciences and are designed to help students gain an understanding of the analytical methods and research procedures used in identifying and solving marketing problems. Courses are available in advertising, promotion, sales and sales management, and international marketing.

The marketing faculty at UGA bring a broad range of perspectives and experiences to the classroom. All are dedicated teachers and active contributors to the marketing profession. Many are known nationally and internationally for their achievements.

Throughout their program, marketing students work closely with the department's advisor, who provides assistance in course selection, individual program progress, and long-range planning. The department sponsors a very active student organization, Pi Sigma Epsilon, which offers students valuable business contacts, leadership experience, and social interaction.

Career Opportunities

The purpose of the marketing major at UGA is to provide students with a basic understanding of marketing and its vital role in society. The marketing curriculum is future-oriented and emphasizes the skills needed for successful and responsible careers in advertising, promotion, sales and sales management, product management, research, and many other related areas. The curriculum is designed to develop the broad background of knowledge required for continuing professional growth in a changing world that is constantly demanding better trained people for executive positions. Of the more than 600 undergraduate marketing majors at UGA, approximately half complete program requirements for the B.B.A. in marketing each year. Many UGA marketing graduates move directly into lucrative sales or management training programs; others go on to graduate programs, such as the Master of Marketing Research (M.M.R.), to prepare for academic or professional careers.

Entrance Requirements and Expectations of Transfer Students

Students intending to pursue this major must meet the following requirements: completion of 60 semester hours, completion of Core Areas A-E, completion of Area F for the B.B.A. degree, and achievement of an overall GPA of 2.6. Students may not enroll in the Terry College of Business while on academic probation or dismissal from another college.

Special Requirements

In addition to the UGA residence policy, B.B.A. students must complete at least 30 semester hours as students in the Terry College. Students are also expected to complete all major courses in residence. In some cases, with departmental permission, a student may receive transfer credit for one major course.

Grades of at least 2.0 in the following are required for B.B.A. degree certification: ENGL 1101 and 1102 combined, major courses, business cumulative GPA, and the UGA cumulative GPA.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)	
Preferred courses in Area D: MATH 1113 or 2200, 2200L (take under general electives if not taken in Area D)	
Preferred courses in Area E: ECON 2100 or 2200 (take under general electives if not taken in Area E)	
Area F:	18
ACCT 2101, 2102; ECON 2105, 2106; LEGL 2700; MIST 2090	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

The department enjoys the support of several leading corporations in the form of scholarships to top marketing students and a high level of interest in recruitment of marketing majors.

Internships

Many students choose to gain valuable work experience and earn academic credit by completing an internship and preparing a paper relating to their work experiences in the field of marketing. Students are responsible for contacting the business, firm, or agency and setting up the internship, which can be paying, and must involve at least 200 hours of work over the course of the semester, i.e., approximately 15 hours per week. Contact the academic advisor for more information.

Marketing Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Wanda Stitt-Gohdes
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(706) 542-4078

Department
Occupational Studies
College of Education

Description of the Program

The marketing education program prepares individuals to teach a cluster of marketing and marketing-related courses in public secondary and postsecondary institutions. Majors enroll in a cross-section of courses in marketing and management offered by the Terry College of Business as well as marketing education and professional education courses from the College of Education. Additional opportunities for marketing internships and occupational updates in business and industry are provided for majors in marketing education.

Career Opportunities

Students are prepared as teachers for grades 7-12 and post-secondary technical institutes. These educational experiences also enhance the ability of the marketing education major to seek other positions in both the public and private sectors related to the areas of training and development and marketing management.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F, grades of C or better in Area F courses, a passing score on Praxis I, and an overall GPA of 2.0 (2.5 required for admission to teacher education).

Expectations of Transfer Students

Recommended courses for transfer students include accounting, business law, economic, psychology, and computer technology.

Special Requirements

A 2.5 GPA is required for admission to teacher education. Appropriate occupational experience in marketing is required for teacher certification.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum *Required courses in Area A*: ENGL 1101, 1102, and MATH 1101 *Preferred courses in Area E*: ECON 2105, 2106, and PSYC 1101 (minimum grade of C)	42
Area F: ACCT 2101, 2102 (minimum grade of C); EFND 2030; EPSY 2020; MIST 2090; three hours of 1000/2000-level electives	18
Major Requirements For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	60
Total hours required	**120**

Internships and Cooperative Education

Supervised observations and participation in cooperating schools are required for all students. Full-time student teaching is required for certification.

Mathematics

Degree
Bachelor of Arts (A.B.), Bachelor of Science (B.S.)

Contact Person
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Department
Mathematics
College of Arts and Sciences

Description of the Program

The Mathematics major at the University of Georgia is demanding yet versatile. The skills emphasized by this major include problem solving and analysis, mathematical modeling, and abstract conceptual thinking. The importance of these skills is recognized in the variety of career opportunities available to the mathematics major. The mathematics major is sometimes used as a stepping stone to professional schools such as law, business, or medicine; it can lead to applied careers in actuarial sciences, computer modeling and applications, and optimization and control theory; it can lead to academic positions, from high school teacher to college professor. Mathematics classes are generally small, offering students a great amount of personal attention. State-of-the-art computer labs are available to mathematics students. And finally, an active Math Club offers students opportunities to interact with each other, graduate students, and faculty. Visit our Web Page at http://www.math.uga.edu/ for further information.

Career Opportunities

Some of our recent graduates have gone on to doctoral work at various top-ranked universities while others have chosen careers in industry. Some employers who have hired recent mathematics majors are: Arthur Anderson, C&S Bank, Delta Airlines, Hansen Inc., NASA, National Security Agency, Southern Bell, and the U.S. Navy.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students are ordinarily expected to have completed the calculus sequence (through MATH 2500), Introduction to Linear Algebra (MATH 3000), Sequences and Series (MATH 3100), and Elementary Differential Equations (MATH 2700) before beginning their junior-year course work. Earliest possible completion of Introduction to Higher Mathematics (MATH 3200) will facilitate the timely fulfillment of major requirements. Mathematics majors are encouraged to take Introductory Physics for Science and Engineering Students—Mechanics, Waves, Thermodynamics (PHYS 1211-1211L) and Introductory Physics for Science and Engineering Students—Electricity and Magnetism, Optics, Modern Physics (PHYS 1212-1212L), as well as Introduction to Computing and Programming (CSCI 1301-1301L).

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum *Required courses in Area A*: ENGL 1101, 1102, and MATH 1113 *Preferred courses in Area D*: MATH 2200, 2200L and two of the following: PHYS 1211-1211L, 1212-1212L, and CSCI 1301-1301L (take under general electives if not taken in Area D)	42

Area F: 18

Math 2210, 2210L

Choose two courses from the following which have not been taken in Area D: PHYS 1211-1211L, 1212-1212L; CSCI 1301-1301L, 1302, 2670, 2720

Choose two courses (at least one of which is a MATH course) from MATH 2500, 2700, PHIL 2500; any Biological Science course approved for Area D; any Chemistry course approved for Area D at or above the level of CHEM 1211; any 2nd, 3rd, or 4th semester foreign language courses; any 1st semester foreign language course not studied in high school

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships

The Strahan Award is a scholarship awarded to the outstanding junior majoring in mathematics.

Minor in Mathematics

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Mathematics Education

Degree

Bachelor of Science in Education (B.S.Ed.)

Contact Persons

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Department

Mathematics Education
College of Education

Description of the Program

This program prepares students to teach mathematics in secondary schools.

Career Opportunities

Apart from preparing students to teach mathematics in Georgia, grades 7-12, the program prepares students for graduate studies in mathematics and for careers that call for mathematics, computer science, and interpersonal skills.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F and an overall GPA of 2.5.

Expectations of Transfer Students

Students transferring into Mathematics Education at the beginning of their junior year should have completed all core requirements, including the calculus sequence MATH 2200, 2200L, 2210, 2210L. An overall GPA of 2.5 is required.

Special Requirements

A minimum grade of C is required in each mathematics course, in each education course, and in requirements for admission to Teacher Education.

Program Requirements

Semester Core Curriculum **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1113 (or if MATH 1113 is exempted, MATH 2200, 2200L* is recommended)

Preferred courses in Area D: (MATH 2200, 2200L)* or (2210, 2210L)* (if 2200, 2200L are taken in Area A)

*Prerequisites for required upper division courses in this major.

Area F: 18

EFND 2030; EPSY 2020; SPED 2000; three courses from CSCI 1301-1301L or above; EMAT 2000; MATH 2210, 2210L or above; PHIL 1500; PHYS 1111-1111L or above; SPCM; STAT 2000 or above

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Microbiology

Degree

Bachelor of Science (B.S.)

Contact Person

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(706) 542-2675

Department

Microbiology
College of Arts and Sciences

Description of the Program

The Department of Microbiology offers courses of instruction in general microbiology, procaryotic biology, pathogenic microbiology, bacterial genetics, medical mycology, environmental microbiology, and biotechnology. Although a laboratory experience is included with some of these courses, the department also provides the opportunity for a student to take intensive laboratory courses that deal primarily with the research aspects of the discipline.

Career Opportunities

A major in microbiology represents a suitable program of study for graduate school in a number of related disciplines such as Biochemistry or Molecular Biology. The major is especially suitable for pre-medical, pre-dental, and pre-veterinary students. Positions as laboratory technicians are also available to graduated majors in academia, industry, and government.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F. Students must earn a grade of C or better in each of the following courses: CHEM 1211, 1211L, 1212, 1212L (or 1311H, 1311L, 1312H, 1312L); BIOL 1107-1107L, 1108-1108L; CHEM 2211, 2211L, 2212, 2212L; MATH 1113. Students must formally apply for admission to the major.

Expectations of Transfer Students

The initial courses in microbiology are MIBO 3500 and MIBO 3510L. It is recommended that these courses be taken at this University, preferably in the first semester of the junior year. Introductory microbiology courses taken elsewhere are usually not accepted. Prerequisites are BIOL 1108-1108L and CHEM 2211. It is recommended that BCMB (BIOL) (CHEM) 3100 be taken prior to, or concurrently with, MIBO 3500. There are no placement examinations or mandatory co-curricular activities.

Fees

Fee cards for MIBO 3510L and 4700 must be purchased at the bookstore. The current cost is about $18.00 per card.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum *Required courses in Area A*: ENGL 1101, 1102, and MATH 1113 *Preferred courses in Area D*: MATH 2200, 2200L, and either of the following lab science sequences (the other sequence to be taken in Area F): CHEM 1211, 1211L and 1212, 1212L or BIOL 1107-1107L and 1108-1108L	42
Area F: Either of the lab science sequences not taken in Area D; CHEM 2211, 2211L; Foreign Language; MATH 2200, 2200L	18
Major Requirements For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	60
Total hours required	**120**

Middle School Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Joyce Brown
Academic Advisor
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(706) 542-4244

Department
Elementary Education
College of Education

Description of the Program

The Middle School Education program has two cohorts starting each fall semester. Each cohort is limited to 22 students, for a total of 44 students entering the program each year. Each cohort consists of four semesters of course work, including one semester of student teaching. Only students who have met the entrance requirements are eligible to apply to the program. Applicants must apply for a specific fall semester (e.g., the 2000 fall semester). Contact the Elementary Education Department for an application and deadlines.

Career Opportunities

An individual with a teaching certificate in middle grades education is licensed to teach the two subjects (selected from language arts, mathematics, science, and social science) in grades 4-8 in which they specialized.

Entrance Requirements

To be considered for admission to the program in Middle School Education, a student must have completed Areas A-F of the core curriculum; have grades of C or better in Area F and pre-professional courses; have an overall GPA of 2.75; have a passing score or exemption on the Praxis I (by test score or exemption); have completed 50 hours of pre-professional experience; and have submitted a satisfactory essay addressing interest in becoming a middle school educator, purpose of schooling, experiences influencing applicant's thinking about middle school education, and experiences with middle school students.

Expectations of Transfer Students

Students are encouraged to contact the academic advisor for specific transfer information.

Program Requirements

Note: Students in this major choose a primary specialization (Specialization I) and a secondary specialization (Specialization II) from the following: Language Arts, Mathematics, Science, or Social Science. Electives in Area F and courses in the major are chosen based on specialization areas.

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: One course in CLAS, CMLT, or ENGL	
Preferred course in Area D: MATH 1113 (if not taken in Area A)	
Area F:	18
EDIT 2000; EFND 2030; EPSY 2020; SPED 2000	
Choose two categories below according to Specialization Areas I and II:	
Language Arts—2000-level ENGL course	
Mathematics—MATH 2200, 2200L	
Science—CHEM 1110, 1110L	
Social Science—ECON 2105 or GEOG 1101 or any 2000-level HIST course	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Music

Degree
Bachelor of Arts (A.B.)

Contact Person
Lisa Bartholow
Undergraduate Coordinator
lhb@arches.uga.edu
(706) 542-2764

Department
School of Music
College of Arts and Sciences

Description of the Program

The Bachelor of Arts degree with a major in Music is designed to allow students to study music without the focus of a particular professional major. The program is structured to provide a strong emphasis in applied music, theory, and music literature with a broad block of general education studies. The degree provides a foundation for professional pursuits in music and prepares the student to enter graduate study in music or other disciplines which accept a general liberal arts degree for entry. The degree is also useful for those who plan to pursue a career which requires a liberal arts education but no specific vocational training.

Career Opportunities

Many jobs in the market today require skills that musicians inherently possess. Such skills as diligence, determination, and detail work are second-nature to most musicians because of the nature of musical study. Many music majors find jobs in the music field following the completion of their baccalaureate degree. Some music majors choose to attend graduate school in pursuit of further music studies. Other UGA music graduates go on to pursue degrees in fields outside of music such as law, business, medicine, or computer science.

Entrance Requirements and Expectations of Transfer Students

Admission to the School of Music is accomplished by completing Core Areas A-E and Area F and by successfully auditioning on a major instrument or voice. This applies to incoming freshmen as well as to transfer students. Students must be admitted into major-level study, which consists of private applied lessons at two credits or higher. Auditions are scheduled through the Undergraduate Office of the School of Music and are evaluated by a faculty jury in the appropriate area of applied music. Students are expected to be prepared to play or sing representative works from their repertoire. For specific detailed audition requirements, contact the School of Music Undergraduate Office.

All music majors are required to take music theory. Transfer students are required to take the Theory Diagnostic Exam offered prior to the beginning of every semester. Contact the Undergraduate Office of the School of Music for the exact date and location of the exam.

Music Major Checksheets listing all the Program Requirements are available in the Undergraduate Office in the School of Music. A School of Music Undergraduate Booklet is also available upon request from the Undergraduate Office. This booklet gives detailed information about the various music majors, music organizations, audition requirements, and scholarship information.

Special Requirements

Further requirements for all music majors include: 1) receiving a grade of C or better in all major courses; 2) passing a keyboard proficiency test; 3) participating in the performing organization appropriate to the major performance medium each semester (e.g., string majors participate in orchestra, voice majors participate in choral organizations, etc.); and 4) attendance and participation in a minimum number of recitals per semester. The student pursuing an A.B. with a major in music may choose to perform a 15-minute minimum senior recital or to perform a jury in place of the recital.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: Six hours from RELI 2004, RELI(AFAM) 2005, or ENGL 2400	
Preferred courses in Area D: GEOL 1121, 1121L, 1122, 1122L	
Preferred course in Area E: ANTH 1102	
Area F:	18
MUSI 1100, 1110, 1120, 1130, 1810 (2 hours), 1820 (2 hours)	
Choose one of the following: MUSI 2400 and 2410 or MUSI 2500 and 2510	
Choose four hours of Performing Organization courses from the following: MUSI 2700, 2710, 2720, 2730, 2740, 2750, 2760, 2770, 2800, 2840	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Music majors are required to pay for the following services. For more specific information on these items, students should contact the School of Music Office, (706) 542-3737.

1) Recitals: All students are required to pay a recording fee for every recital they perform. The length of the recital and the time of day of the program affect the cost of the recital fee.
2) Recital Cards: Music majors are required to attend a minimum number of recitals per semester and are required to purchase a recital card which will be presented and punched to record attendance at each recital on campus. The recital card lasts for one academic year. Recital cards are available from the Music Office.

Scholarships

Financial aid available through the School of Music includes both School of Music sponsored and band sponsored scholarships. These scholarships are renewable each year with a maximum contract length of four years as long as the student's level of achievement is satisfactory. One audition satisfies both the admission and scholarship consideration requirements. The School of Music and University Bands Scholarship applications and additional information on the application process are found in the Undergraduate Booklet, which may be obtained from the Undergraduate Office: (706) 542-2764.

Minor in Music

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Music Composition

Degree
Bachelor of Music (B.Mus.)

Contact Person
Lisa Bartholow
Undergraduate Coordinator
lhb@arches.uga.edu
(706) 542-2764

Dr. Roger Vogel
Chair of Music Theory and Music Composition
rogvogel@arches.uga.edu
(706) 542-2785

Department
School of Music
College of Arts and Sciences

Description of the Program

The Bachelor of Music with a major in Composition is designed to prepare the student to begin professional work or to pursue graduate study. The program provides three years of applied study on a major instrument, as well as three years of intensive study in composition, during which the student participates in weekly seminars that focus on the analysis of contemporary music and evaluation of student compositions. The program includes a strong foundation in theory and music literature along with applied study on a secondary instrument. Performance of contemporary music is emphasized. The senior recital requires a multi-movement or large-form composition for an ensemble.

Career Opportunities

Many jobs in the market today require skills that musicians inherently possess. Such skills as diligence, determination, and detail work are second-nature to most musicians because of the nature of musical study. Many music majors find jobs in the music field after completing their baccalaureate degree. Some music majors choose to attend graduate school in pursuit of further music studies. Other UGA music graduates go on to pursue degrees in fields outside of music such as law, business, medicine, or computer science.

Entrance Requirements and Expectations of Transfer Students

Admission to the School of Music is accomplished by completing Core Areas A-E and Area F and by successfully auditioning on a major instrument or voice. This applies to incoming freshmen as well as to transfer students. Students must be admitted into major-level study, which consists of private applied lessons at two credits or higher. Auditions are scheduled through the Undergraduate Office of the School of Music and are evaluated by a faculty jury in the appropriate area of applied music. Students are expected to be prepared to play or sing representative works from their repertoire. For specific detailed audition requirements, contact the School of Music Undergraduate Office, (706) 542-2764.

All music majors are required to take music theory. Freshman music majors begin their music theory study in the first semester of the freshman year. Transfer students are required to take the Theory Diagnostic Exam offered prior to the beginning of every semester. Contact the Undergraduate Office of the School of Music for the exact date and location of the exam.

Music Major Checksheets listing all the Program Requirements are available in the Undergraduate Office in the School of Music. A School of Music Undergraduate Booklet is also available upon request from the Undergraduate Office. This booklet gives detailed information about the various music majors, music organizations, audition requirements, and scholarship information.

Special Requirements

Further requirements for all music majors include: 1) receiving a grade of C or better in all major courses; 2) passing a keyboard proficiency test; 3) participating in the performing organization appropriate to the major performance medium each semester (e.g., string majors participate in orchestra, voice majors participate in choral organizations, etc.); and 4) attendance and participation in a minimum number of recitals per semester. Composition majors give recitals in both their instrument or voice applied lessons and in composition.

Students are expected to earn grades of B or better in all theory and ear training classes in order both to be admitted and to be retained in the composition program. *Note:* Conditional acceptance into/rejection from the composition program will be made at the end of the first semester of the sophomore year; only the instructor is responsible for this decision, unless he or she wishes to have additional opinions from the rest of the composition faculty.

Full acceptance is granted at the end of the sophomore year; this requires a jury before the full composition faculty with selected works written during the sophomore year being presented. The jury to determine full acceptance will take place at the end of the second semester of the sophomore year.

Program Requirements

The program requirements for the B.Mus. in Music Composition are undergoing revision. Please contact the School of Music or refer to the online bulletin at www.bulletin.uga.edu. for current information.

Fees

Music majors are required to pay for the following services. For more specific information on these items, students should contact the School of Music Office, (706) 542-3737.

1) Recitals: All students are required to pay a recording fee for every recital they perform. The length of the recital and the time of day of the program affect the cost of the recital fee. Contact the Music Office for more information.
2) Recital Cards: Music majors are required to attend a minimum number of recitals per semester and are required to purchase a recital card which will be presented and punched to record attendance at each recital on campus. The recital card lasts for one academic year. Recital cards are available from the Music Office.

Scholarships

Financial aid available through the School of Music includes both School of Music sponsored and band sponsored scholarships. These scholarships are renewable each year with a maximum contract length of four years as long as the student's level of achievement is satisfactory. One audition satisfies both the admission and scholarship consideration requirements. The School of Music and University Bands Scholarship applications and additional information on the application process are found in the Undergraduate Booklet, which may be obtained from the Undergraduate Office: (706) 542-2764.

Music Education

Degree
Bachelor of Music (B.Mus.)

Contact Person
Lisa Bartholow
Undergraduate Coordinator
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(706) 542-2764

Dr. Harriet Hair
Chair of Music Education
hhairmus@arches.uga.edu
(706) 542-2755

Department
School of Music
College of Arts and Sciences

Description of the Program

The program of study leading to the degree Bachelor of Music with a major in Music Education is designed for the student preparing for a career in teaching. Students completing the program are recommended for certification to teach music in the public school systems of Georgia. The program is comprehensively structured to allow for continued study at the graduate level. In accordance with state certification requirements, students may elect to pursue one of four programs of study: Choral Music Education with a concentration in voice, Choral Music Education with a concentration in piano, Instrumental Music Education with a concentration in piano, or Instrumental Music Education with a concentration in a band or orchestral instrument. With additional study the degree may be earned with more than one emphasis.

Career Opportunities

Many jobs in the market today require skills that musicians inherently possess. Such skills as diligence, determination, and detail work are second-nature to most musicians because of the nature of musical study. Many music majors find jobs in the music field following the completion of their baccalaureate degree. Some music majors choose to attend graduate school in pursuit of further music studies. Other UGA music graduates go on to pursue degrees in fields outside of music such as law, business, medicine, or computer science.

Entrance Requirements and Expectations of Transfer Students

Admission to the School of Music is accomplished by completing Core Areas A-E and Area F and by successfully auditioning on a major instrument or voice. This applies to incoming freshmen as well as to transfer students. Students must be admitted into major-level study, which consists of private applied lessons at two credits or higher. Auditions are scheduled through the Undergraduate Office of the School of Music and are evaluated by a faculty jury in the appropriate area of applied music. Students are expected to be prepared to play or sing representative works from their repertoire. For specific detailed audition requirements, contact the School of Music Undergraduate Office, (706) 542-2764.

All music majors are required to take music theory. Transfer students are required to take the Theory Diagnostic Exam offered prior to the beginning of every semester. Contact the Undergraduate Office of the School of Music for the exact date and location of the exam.

Music Major Checksheets listing all the Program Requirements are available in the Undergraduate Office in the School of Music. A School of Music Undergraduate Booklet is also available upon request from the Undergraduate Office. This booklet gives detailed information about the various music majors, music organizations, audition requirements, and scholarship information.

Special Requirements

Further requirements for all music majors include: 1) receiving a grade of C or better in all major courses; 2) passing a keyboard proficiency test; 3) participating in the performing organization appropriate to the major performance medium each semester (e.g., string majors participate in orchestra, voice majors participate in choral organizations, etc.); and 4) attendance and participation in a minimum number of recitals per semester.

Music majors interested in pursuing a major in Music Education must take a Music Education Interview with the Music Education faculty at the end of the freshman year. A grade point average of 2.5 or better is required for this major.

Program Requirements

The program requirements for the B.Mus. in Music Education are undergoing revision. Please contact the School of Music or refer to the online bulletin at *www.bulletin.uga.edu* for current information.

Fees

Music majors are required to pay for the following services. For more specific information on these items, students should contact the School of Music Office, (706) 542-3737.

1) Recitals: All students are required to pay a recording fee for every recital they perform. The length of the recital and the time of day of the program affect the cost of the recital fee. Contact the Music Office for more information.

2) Recital Cards: Music majors are required to attend a minimum number of recitals per semester and are required to purchase a recital card which will be presented and punched to record attendance at each recital on campus. The recital card lasts for one academic year. Recital cards are available from the Music Office.

Scholarships

Financial aid available through the School of Music includes both School of Music-sponsored and band-sponsored scholarships. These scholarships are renewable each year with a maximum contract length of four years as long as the student's level of achievement is satisfactory. One audition satisfies both the admission and scholarship consideration requirements. The School of Music and University Bands Scholarship applications and additional information on the application process are found in the Undergraduate Booklet, which may be obtained from the Undergraduate Office, (706) 542-2764.

Music Performance

Degree
Bachelor of Music (B.Mus.)

Contact Person
Lisa Bartholow
Undergraduate Coordinator
lhb@arches.uga.edu
(706) 542-2764

Department
School of Music
College of Arts and Sciences

Description of the Program

The program of study leading to the degree Bachelor of Music with a major in Performance is designed for the student preparing for a career as a professional performer, a studio teacher, or a college professor. The curriculum for the degree is designed to develop a strong foundation in music history, music theory, and performance, and to insure flexibility for continued study at the graduate level. The degree provides for maximum development of individual musicianship and the various competencies necessary to the contemporary performer. The student has numerous opportunities to perform including required junior and senior solo recitals.

Career Opportunities

Many jobs in the market today require skills that musicians inherently possess. Such skills as diligence, determination, and detail work are second-nature to most musicians because of the nature of musical study. Many music majors find jobs in the music field following the completion of their baccalaureate degree. Some music majors choose to attend graduate school in pursuit of further music studies. Other UGA music graduates go on to pursue degrees in fields outside of music such as law, business, medicine, or computer science.

Entrance Requirements and Expectations of Transfer Students

Admission to the School of Music is accomplished by completing Core Areas A-E and Area F and by successfully auditioning on a major instrument or voice. This applies to incoming freshmen as well as to transfer students. Students must be admitted into major-level study, which consists of private applied lessons at two credits or higher. Auditions are scheduled through the Undergraduate Office of the School of Music and are evaluated by a faculty jury in the appropriate area of applied music. Students are expected to be prepared to play or sing representative works from their repertoire. For specific detailed audition requirements contact the School of Music Undergraduate Office, (706) 542-2764.

All music majors are required to take music theory. Transfer students are required to take the Theory Diagnostic Exam offered prior to the beginning of every semester. Contact the Undergraduate Office of the School of Music for the exact date and location of the exam.

Music Major Checksheets listing all the Program Requirements are available in the Undergraduate Office in the School of Music. A School of Music Undergraduate Booklet is also available upon request from the Undergraduate Office. This booklet gives detailed information about the various music majors, music organizations, audition requirements, and scholarship information.

Special Requirements

Further requirements for all music majors include: 1) receiving a grade of C or better in all major courses; 2) passing a keyboard proficiency test; 3) participating in the performing organization appropriate to the major performance medium each semester (e.g., string majors participate in orchestra, voice majors participate in choral organizations, etc.); and 4) attendance and participation in a minimum number of recitals per semester.

Music majors interested in pursuing a major in Performance must be admitted by the appropriate area faculty following the second semester jury of the freshman year.

Program Requirements

The program requirements for the B.Mus. in Music Performance are undergoing revision.

Please contact the School of Music or refer to the online bulletin at www.bulletin.uga.edu. for current information.

Fees

Music majors are required to pay for the following services. For more specific information on these items, students should contact the School of Music Office, (706) 542-3737.

1) Recitals: All students are required to pay a recording fee for every recital they perform. The length of the recital and the time of day of the program affect the cost of the recital fee. Contact the Music Office for more information.
2) Recital Cards: Music majors are required to attend a minimum number of recitals per semester and are required to purchase a recital card which will be presented and punched to record attendance at each recital on campus. The recital card lasts for one academic year. Recital cards are available from the Music Office.

Scholarships

Financial aid available through the School of Music includes both School of Music-sponsored and band-sponsored scholarships. These scholarships are renewable each year with a maximum contract length of four years as long as the student's level of achievement is satisfactory. One audition satisfies both the admission and scholarship consideration requirements. The School of Music and University Bands Scholarship applications and additional information on the application process are found in the Undergraduate Booklet, which may be obtained from the Undergraduate Office: 706) 542-2764.

Music Theory

Degree
Bachelor of Music (B.Mus.)

Contact Person
Lisa Bartholow
Undergraduate Coordinator
lhb@arches.uga.edu
(706) 542-2764

Dr. Roger Vogel
Chair of Music Theory and Music Composition
rogvogel@arches.uga.edu
(706) 542-2785

Department
School of Music
College of Arts and Sciences

Description of the Program

The program of study leading to the degree Bachelor of Music with a major in Music Theory is designed to prepare the student for graduate studies in research-oriented degrees. The curriculum is structured to give a strong foundation in the academic study of music theory with concentrations in music history, performance, and an introduction to composition. The course of study in music theory includes the areas of form and analysis, counterpoint, and compositional techniques, and culminates in a research project which demonstrates the student's knowledge and abilities in the field.

Career Opportunities

Many jobs in the market today require skills that musicians inherently possess. Such skills as diligence, determination, and detail work are second-nature to most musicians because of the nature of musical study. Many music majors find jobs in the music field following the completion of their baccalaureate degree. Some music majors choose to attend graduate school in pursuit of further music studies. Other UGA music graduates go on to pursue degrees in fields outside of music such as law, business, medicine, or computer science.

Entrance Requirements and Expectations of Transfer Students

Admission to the School of Music is accomplished by completing Core Areas A-E and Area F and by successfully auditioning on a major instrument or voice. This applies to incoming freshmen as well as to transfer students. Students must be admitted into major-level study, which consists of private applied lessons at two credits or higher. Auditions are scheduled through the Undergraduate Office of the School of Music and are evaluated by a faculty jury in the appropriate area of applied music. Students are expected to be prepared to play or sing representative works from their repertoire. For specific detailed audition requirements, contact the School of Music Undergraduate Office, (706) 542-2764.

All music majors are required to take music theory. Transfer students are required to take the Theory Diagnostic Exam offered prior to the beginning of every semester. Contact the Undergraduate Office of the School of Music for the exact date and location of the exam.

Music Major Checksheets listing all the Program Requirements are available in the Undergraduate Office in the School of Music. A School of Music Undergraduate Booklet is also available upon request from the Undergraduate Office. This booklet gives detailed information about the various music majors, music organizations, audition requirements, and scholarship information.

Special Requirements

Further requirements for all music majors include: 1) receiving a grade of C or better in all major courses; 2) passing a keyboard proficiency test; 3) participating in the performing organization appropriate to the major performance medium each semester (e.g., string majors participate in orchestra, voice majors participate in choral organizations, etc.); and 4) attendance and participation in a minimum number of recitals per semester.

Music majors interested in pursuing a major in Music Theory must take a Music Theory Interview with the Music Theory faculty at the end of the freshman year.

Program Requirements

The program requirements for the B.Mus. in Music Theory are undergoing revision. Please contact the School of Music or refer to the online bulletin at www.bulletin.uga.edu for current information.

Fees

Music majors are required to pay for the following services. For more specific information on these items, students should contact the School of Music Office, (706) 542-3737.

1) Recitals: All students are required to pay a recording fee for every recital they perform. The length of the recital and the time of day of the program affect the cost of the recital fee. Contact the Music Office for more information.
2) Recital Cards: Music majors are required to attend a minimum number of recitals per semester and are required to purchase a recital card which will be presented and punched to record attendance at each recital on campus. The recital card lasts for one academic year. Recital cards are available from the Music Office.

Scholarships

Financial aid available through the School of Music includes both School of Music-sponsored and band-sponsored scholarships. These scholarships are renewable each year with a maximum contract length of four years as long as the student's level of achievement is satisfactory. One audition satisfies both the admission and scholarship consideration requirements. The School of Music and University Bands Scholarship applications and additional information on the application process are found in the Undergraduate Booklet, which may be obtained from the Undergraduate Office, (706) 542-2764.

Music Therapy

Degree
Bachelor of Music (B.Mus.)

Contact Person
Lisa Bartholow
Undergraduate Coordinator
lhb@arches.uga.edu
(706) 542-2764

Dr. Roy Grant
Chair of Music Therapy
rgrant@arches.uga.edu
(706) 542-2801

Department
School of Music
College of Arts and Sciences

Description of the Program

The program of study leading to the degree Bachelor of Music with a major in Music Therapy prepares the student for a career in the use of music for the restoration, maintenance, or improvement of mental and/or physical health. The Music Therapy curriculum includes a strong emphasis in psychology and the social sciences. It is structured to provide a foundation in the scientific application of music in rehabilitative environments such as hospitals, retardation centers, and special education programs within the framework of the public school system. Students completing the degree program are eligible to become members of the National Registry of Music Therapists upon completion of a six-month internship in an approved Music Therapy Program.

Career Opportunities

Many jobs in the market today require skills that musicians inherently possess. Such skills as diligence, determination, and detail work are second-nature to most musicians because of the nature of musical study. Many music majors find jobs in the music field following the completion of their baccalaureate degree. Some music majors choose to attend graduate school in pursuit of further music studies. Other UGA music graduates go on to pursue degrees in fields outside of music such as law, business, medicine, or computer science.

Entrance Requirements and Expectations of Transfer Students

Admission to the School of Music is accomplished by completing Core Areas A-E and Area F and by successfully auditioning on a major instrument or voice. This applies to incoming freshmen as well as to transfer students. Students must be admitted into major-level study, which consists of private applied lessons at two credits or higher. Auditions are scheduled through the Undergraduate Office of the School of Music and are evaluated by a faculty jury in the appropriate area of applied music. Students are expected to be prepared to play or sing representative works from their repertoire. For specific detailed audition requirements, contact the School of Music Undergraduate Office, (706) 542-2764.

All music majors are required to take music theory. Transfer students are required to take the Theory Diagnostic Exam offered prior to the beginning of every semester. Contact the Undergraduate Office of the School of Music for the exact date and location of the exam.

Music Major Checksheets listing all the Program Requirements are available in the Undergraduate Office in the School of Music. A School of Music Undergraduate Booklet is also available upon request from the Undergraduate Office. This booklet gives detailed information about the various music majors, music organizations, audition requirements, and scholarship information.

Special Requirements

Further requirements for all music majors include: 1) receiving a grade of C or better in all major courses; 2) passing a keyboard proficiency test; 3) participating in the performing organization appropriate to the major performance medium each semester (e.g., string majors participate in orchestra, voice majors participate in choral organizations, etc.); and 4) attendance and participation in a minimum number of recitals per semester.

Program Requirements

The program requirements for the B.Mus. in Music Therapy are undergoing revision. Please contact the School of Music or refer to the online bulletin at www.bulletin.uga.edu for current information.

Fees

Music majors are required to pay for the following services. For more specific information on these items, students should contact the School of Music Office, (706) 542-3737.

1) Recitals: All students are required to pay a recording fee for every recital they perform. The length of the recital and the time of day of the program affect the cost of the recital fee. Contact the Music Office for more information.
2) Recital Cards: Music majors are required to attend a minimum number of recitals per semester and are required to purchase a recital card which will be presented and punched to record attendance at each recital on campus. The recital card lasts for one academic year. Recital cards are available from the Music Office.

Scholarships

Financial aid available through the School of Music includes both School of Music-sponsored and band-sponsored scholarships. These scholarships are renewable each year with a maximum contract length of four years as long as the student's level of achievement is satisfactory. One audition satisfies both the admission and scholarship consideration requirements. The School of Music and University Bands Scholarship applications and additional information on the application process are found in the Undergraduate Booklet, which may be obtained from the Undergraduate Office, (706) 542-2764.

Newspapers

Degree
Bachelor of Arts in Journalism (A.B.J.)

Contact Person
Dr. Kent Middleton
Department Head
kmiddlet@arches.uga.edu
(706) 542-5030

Department
Journalism
College of Journalism and Mass Communication

Description of the Program

This major is designed to help students prepare for careers in newspapers, news services, and other employment areas which require expertise in information gathering, analysis of information, writing, and editing.

Career Opportunities

Newspaper graduates typically begin their careers as reporters, writers, copy editors, or layout and design specialists.

Entrance Requirements

Applications are accepted only from students who have met minimum requirements in number of credit hours (at least 60 semester hours and satisfactory completion of Areas A-F of the Core Curriculum which includes foreign language at the second and third levels and micro or macro economics), cumulative and overall grade point averages of at least 2.5, and English proficiency (recentered SATV score of at least 650, ACTV score of at least 30 or at least 77 on an English proficiency test administered by UGA's Testing Center). Meeting *minimum* requirements assures consideration but is not a guarantee of admission.

A point system based on academic achievement and test scores determines a student's standing among other applicants. Those presenting the highest qualifications are accepted each semester of the academic year.

Expectations of Transfer Students

The academic program for the A.B.J. degree consists of two parts: Areas A-F of the core curriculum (which includes foreign language at the second and third levels and micro or macro economics) taken during the freshman and sophomore years at UGA or another institution and the professional program taken after formal admission to the Grady College. Pre-Journalism students at the University of Georgia are enrolled in the Franklin College of Arts and Sciences.

Admission to the University of Georgia is not a guarantee of admission to the Grady College of Journalism and Mass Communication. A maximum number of spaces in each major is determined by the availability of teaching staff, classroom space, lab facilities and other resources. In reaching its decisions on how many students may be admitted each semester, the Admissions Committee is governed by the number already enrolled in each major, the number expected to graduate and the number applying. Grade point averages and test scores are the primary measures upon which admission decisions are based. It is recognized that the inclusion of talented students of diverse international and racial backgrounds is an indispensable part of the educational process and the Committee considers the need for such diversity in reaching its decisions. See Entrance Requirements.

Applications must be submitted directly to the Office of Undergraduate Services, Room 201, College of Journalism and Mass Communication. The deadline is 4:00 p.m. on Friday of the second full week of classes.

Special Requirements

No more than two courses or seven semester credit hours in journalism and mass communication courses earned before admission to the Grady College, whether at UGA or another institution, may be applied toward satisfaction of requirements for the A.B.J. degree. At least 20 semester credit hours of journalism and mass communication courses which satisfy A.B.J. degree credit must be earned at the University of Georgia.

A total of 121 semester hours (includes one hour of PE) must be successfully completed to earn the A.B.J. degree. At least 90 semester hours must be taken outside the college, of which at least 65 must be in liberal arts and sciences courses. No more than 32 semester credit hours in journalism and mass communication courses may be applied toward requirements for the Newspapers major.

A grade of C or higher must be earned in any journalism and mass communication course which counts toward satisfaction of requirements for the A.B.J. degree.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: One literature course from CLAS, CMLT, ENGL	
Preferred course in Area D: STAT 2000	
Preferred courses in Area E: ANTH 1102 or GEOG 1125	
Area F:	18
Foreign language sequence through the third semester	
ECON 2105 or 2106	
Choose 9 hours of 1000/2000-level courses from ANTH, ARTS, CLAS, CMLT, DRAM, ENGL, GEOG, HIST, PHIL, POLS, PSYC, RELI, SOCI, SPCM, STAT	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Some courses require the purchase of a supply card from the University bookstore.

Scholarships

About 30 undergraduate scholarships are administered by the Grady College each academic year. A general application submitted during the spring semester assures consideration for any of the scholarships for which the applicant is qualified.

Application forms may be obtained in the Office of Undergraduate Services, Room 201, Grady College of Journalism and Mass Communication.

Internships

Valuable practical experience is gained by serving an internship. Although not required, internships are considered important to a student's total educational experience and greatly enhance job opportunities upon graduation. Academic credit may be earned for successful completion of an internship if:

1. Advance approval is received from the department. A written request must be submitted that includes a job description, length of internship, name of supervisor and rate of pay. Also, a letter verifying the internship offer must be submitted by the employer prior to the first day of the semester in which the internship is served.
2. Certain basic courses as determined by the department have been completed.

3. The internship covers a minimum number of weeks of full-time employment as determined by the department.
4. During the semester of the internship the student registers concurrently for JOUR 5010, which is included in the maximum semester hours of journalism and mass communication credit which may be earned toward the Newspapers major.
5. A written report is submitted by the employer prior to the last day of the semester in which the internship is served describing the intern's duties and the quality of performance.
6. A final, written report of week-by-week activities is submitted by the student to the department prior to the last day of the semester in which the internship is served.

Nutrition Science

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Dr. James Hargrove
Associate Professor
jhargrov@fcs.uga.edu
(706) 542-4872

Department
Foods and Nutrition
College of Family and Consumer Sciences

Description of the Program

This major is designed to provide basic training in nutrition and related sciences. Students interested in research, college teaching, or administrative positions in nutrition will be prepared for graduate study with this major. Selection of appropriate electives permits adaptation of this major to the student's primary interest area. This major is an excellent preparation for entry into the various fields of medicine.

Career Opportunities

Nutrition Science majors pursue a range of careers due to their broad science training. They have excellent backgrounds for medical or dental school. Graduates may be employed by agricultural commodity groups; food and pharmaceutical manufacturers in research, development, public relations, or education sections. They find careers in government food or health agencies at the national, state, or local level. Agencies such as the Food and Drug Administration and Departments of Agriculture, Health and Human Resources, or Education also employ graduates of this major. Many positions in nutrition require graduate study.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students who have completed two years of college work and are planning to transfer into this major are expected to have completed Biology 1107-1107L and 1108-1108L or the equivalent. In addition, it is crucial that the students have completed Freshman Chemistry 1211, 1211L and 1212, 1212L with a grade of C or better. Satisfactory progress requires completion of Organic Chemistry 2211, 2211L prior to the end of fall semester during the junior year, in preparation for FDNS 3100.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E: See Core Curriculum	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: CHEM 1211, 1211L, 1212, 1212L, and STAT 2000	
Preferred courses in Area E: ANTH 1102 and PSYC 1101	
Area F:	18
BIOL 1107-1107L, 1108-1108L; CHEM 2211, 2211L; CHFD 2100 or HACE 2100; FDNS 2100	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Note: Pre-medical students who select this major must take either PHYS 1111-1111L and 1112-1112L or PHYS 1211-1211L and 1212-1212L. It is recommended that they take CBIO 3000-3000L and VPHY 3100 instead of CBIO 2200-2200L and 2210-2210L. To accommodate this modified plan, it is recommended that pre-medical students take only 17 hours of the electives in major electives.

Pharmacy

See Pre-Pharmacy on page 294 of this Bulletin, see the College of Pharmacy on page 139, or contact the College for a copy of the *College of Pharmacy Bulletin* for additional information on degree programs in Pharmacy.

Philosophy

Degree
Bachelor of Arts (A.B.)

Contact Person
Robert Burton
Undergraduate Coordinator
rburton@arches.uga.edu
(706) 542-2823

Department
Philosophy
College of Arts and Sciences

Description of the Program

The program of the department is designed to guide the student in the systematic investigation of such basic issues as the nature of reality, knowledge, value, and obligation. This involves studying the major figures of the western philosophical tradition and assessing the major options that have emerged. The student acquires the philosophical skills of inquiry, including critical thinking, the discovery and evaluation of basic assumptions, the analysis of concepts, the analysis of experience, and the construction and assessment of arguments.

Career Opportunities

The philosophy major develops analytic and critical thinking skills essential to all professions. The major program can be tailored for careers in law, business, education, and many other professions.

Entrance Requirements and Expectations of Transfer Students

Entrance to the major requires completion of Core Areas A-E and Area F.

Special Requirements

Philosophy majors and minors should acquire an e-mail account and notify the department of his/her e-mail address.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
PHIL 1000, 2200, 2500	
Choose three 3-hour courses from HIST 2301, 2302, or courses in Art, African American Studies, Classics, Comparative Literature, Drama, English, Linguistics, Music, Philosophy, Religion, or Women's Studies	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Philosophy

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Physics

Degree
Bachelor of Science (B.S.)

Contact Person
Dr. Alan Edwards
Undergraduate Academic Advisor
aedwards@physast.uga.edu
(706) 542-2891

Department
Physics and Astronomy
College of Arts and Sciences

Description of the Program

Physics is the study of how the universe works. Students majoring in physics will study the theories of classical mechanics, electricity and magnetism, and quantum mechanics. Practical applications of these theories are covered in other required courses such as Optics and Electronics. Throughout the course of study, emphasis is placed on using one's understanding of the theories to solve problems.

Career Opportunities

Physicists are trained to solve problems by thinking critically, logically, and systematically. A physicist can work effectively in any career which requires these skills. Some students continue in physics research and are ultimately employed in private or government research laboratories, or at universities. Other students go to graduate school in other fields, the most frequent choices being Computer Science, Engineering, Medicine, and Law. Many Ph.D. physicists are employed outside of physics, for example in computer-related professions, or as financial analysts, or in nuclear medicine.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students intending to pursue a major in physics should begin calculus as soon as possible and at least by the second semester of their freshman year and complete it through MATH 2500. They should begin the PHYS 1211-1211L, 1212-1212L sequence by the second semester of their freshman year. A grade of C or better in PHYS 1211-1211L, and 1212-1212L (or PHYS 1111-1111L and 1112-1112L) must be earned before a physics major enrolls in more advanced PHYS courses. We recommend that all physics majors take PHYS 3700 and 3900 in the spring of their sophomore year to prepare adequately for the upper-division courses in the junior year. We recommend that sophomore students who transfer into the program later than spring semester either be familiar with this material or delay their entry into upper-division course work until PHYS 3700 and 3900 have been taken.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: CHEM 1211, 1211L, 1212, 1212L and MATH 2200, 2200L (take under general electives if not taken in Area D).	
Area F:	18
PHYS 1211-1211L (or 1111-1111L), 1212-1212L (or 1112-1112L); MATH 2200, 2200L (if taken in Area D, select additional hours in mathematics, computer science, or chemistry); MATH 2210, 2210L, 2500	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

The Hendren Memorial Scholarship is available to students in this major. A number of research opportunities also exist for undergraduate students, and many carry a stipend.

Minor in Physics

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Physics and Astronomy

Degree
Bachelor of Science (B.S.)

Contact Person
J. Scott Shaw
Undergraduate Academic Advisor
jss@hal.physast.uga.edu
(706) 542-2485

Department
Physics and Astronomy
College of Arts and Sciences

Description of the Program

The Physics and Astronomy major combines the fundamental study of physics with observational astronomy and astrophysics. Emphasis is placed on applying theory to current astronomical and astrophysical problems and on individual research.

Career Opportunities

Career opportunities include employment in private and government laboratories, teaching, in planetaria, in the armed forces, or in teaching.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students intending to pursue a major in physics and astronomy should begin calculus as soon as possible, at least by the second semester of their freshman year, and complete it through MATH 2500. They should complete the PHYS 1211-1211L, 1212-1212L and the ASTR 1010,1010L; ASTR 1020, 1020L sequences before the first semester of their junior year. A physics and astronomy major must have a grade of C or better in PHYS 1211-1211L, and 1212-1212L (or PHYS 1111-1111L and 1112-1112L) before enrolling in more advanced PHYS courses and a grade of C or better in ASTR 1010 and ASTR 1020 (or ASTR 1110H and ASTR 1120H) before enrolling in more advanced ASTR courses.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: ASTR 1010, 1010L, 1020, 1020L and MATH 2200, 2200L (take under general electives if not taken in Area D).	

Area F: 18
MATH 2200, 2200L, 2210, 2210L, 2500; PHYS 1211-1211L (1111-1111L with approval); PHYS 1212-1212L (1112-1112L with approval)
Major Requirements 60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships

The Hendren Memorial Scholarship is available to students in this major.

Minor in Physics and Astronomy

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Plant Protection and Pest Management

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Katherine L. Stevenson
Associate Professor and Undergraduate Coordinator
ks@arches.uga.edu
(706) 542-1239

Department
Plant Pathology
College of Agricultural and Environmental Sciences

Description of the Program

The plant protection and pest management major is designed to provide education in the many principles essential for the diagnosis and management of diseases affecting the plants that provide our needs in food, forage and fiber, and bring beauty to our landscapes. Emphasis is on understanding the biology of the cause and nature of plant diseases, and the ecological principles of effective integrated disease management practices. The social and economic impacts of plant diseases in both the rural and urban environment are also examined. The Plant Protection and Pest Management program provides an excellent opportunity for the exceptional student to complement their major in Crop and Soil Sciences, Horticulture, or Entomology with a second major to become better prepared for employment.

Career Opportunities

Graduates are prepared to pursue careers in the public and private sectors in the science and business of managing plant diseases. The program also provides the student with the opportunity to be prepared to pursue graduate education in plant pathology or other biological sciences.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Transfer students should have taken either BIOL 1107-1107L and 1108-1108L or BTNY 1210, 1210L and 1220, 1220L as well as CHEM 1211, 1211L and 1212, 1212L.

Special Requirements

A grade of C or better is required in major courses.

Program Requirements

Semester Core Curriculum **Hours**
Areas A-E: 42
See Core Curriculum
Required courses in Area A: ENGL 1101, 1102, and MATH 1113
Preferred course in Area C: SPCM 1100
Preferred courses in Area D: BIOL 1107-1107L or BTNY 1210, 1210L; CHEM 1211, 1211L; and STAT 2000 or 2210
Area F: 18
BIOL 1108-1108L or BTNY 1220, 1220L; CHEM 1212, 1212L; (CHEM 2100, 2100L) or (CHEM 2211, 2211L) or PHYS 1111-1111L or 1211-1211L; CRSS 2010-2010L or HORT 2000
Select 2 to 4 hours from AAEC 2580; CHEM 2100, 2100L, 2211, 2211L, 2212, 2212L; CRSS 2010-2010L, 2830; ECOL 1000-1000L; ENTO(BIOL) 2010; GEOG 1112, 1112L, 1125; HORT 2000; PHYS 1111-1111L, 1211-1211L; STAT 2000, 2210
Major Requirements 60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships

Two departmental scholarships are offered annually. In addition, more than 100 competitive scholarships are available from the College of Agricultural and Environmental Sciences. For more information about college-wide scholarships, contact the Office of Academic Affairs in the College.

Internships

The department employs students on a part-time basis and also assists them in locating summer jobs and internships with agribusiness and the Cooperative Extension Service.

Political Science

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Scott Ainsworth
Undergraduate Coordinator
polugrad@arches.uga.edu
(706) 542-2057

Department
Political Science
College of Arts and Sciences

Description of the Program

Political Science offers students interested in developing a broader and deeper understanding of politics the opportunity to do so within a structured program of study. The faculty's interests cover most specialities within political science. A range of courses covers politics in the United States, other political systems, relations among nations, important debates in political philosophy, legal and constitutional issues, research skills and other topics.

Career Opportunities

Like all good liberal arts majors, political science helps students develop their analytical and problem-solving abilities, as well as improve their written and oral communications skills. It provides excellent preparation for graduate education in law and public administration, as well as doctoral programs in political science. Political science is also a good foundation for careers in public service, campaign work, and various management positions in the private sector.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Transfer students should have completed at least POLS 1101 or equivalent, which is the prerequisite for all courses in the major.

Special Requirements

All courses for the major must have a grade of C or better. No more than six hours at the 2000 level, no more than six online/independent study hours, and no more than nine hours of transfer credit may be counted toward the major.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: PHIL 1000, 1500, or 2200	
Preferred courses in Area D: STAT 2000 or 2210	
Preferred courses in Area E: ECON 2105 or 2106	
Area F:	18
Completion or exemption through the third semester of one foreign language required.	
1000/2000-level courses from the following: ANTH, ECON, HIST, MATH 1060 or 1113, PHIL, SOCI, SPCM, STAT, and foreign languages recommended	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Internships

The department maintains information on the Governor's Intern Program, which is offered every academic term, and the Georgia Legislative Intern Program, which has positions during the spring semester, when the Georgia General Assembly holds its annual session. Other information on internships with government agencies, election campaigns, interest groups, private firms, and other organizations is available at Career Planning and Placement in Clark Howell Hall. All internships have specific upper-division courses as prerequisites and must be approved in advance (see the department's "Undergraduate Manual" for details).

Minor in Political Science

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Poultry Science

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Person
Michael P. Lacy
Department Head
mlacy@arches.uga.edu
(706) 542-1333

Department
Poultry Science
College of Agricultural and Environmental Sciences

Description of the Program

All students in the Department of Poultry Science are encouraged to obtain a well-rounded education in the humanities and social sciences as well as the biological, chemical, and physical sciences. Students receive a minimum of 36 semester credit hours of poultry science dealing with production, management, breeding, nutrition, anatomy and physiology, processing, and diseases. To complete their program of study, poultry science students may elect additional courses in either agribusiness or science. Fundamental education in agricultural business, marketing, finance, and management prepares students for entering the dynamic poultry industry in a wide variety of positions. In-depth courses in biological and agricultural sciences prepare students who aspire to careers in teaching, research, and development for entering graduate or professional schools.

Career Opportunities

Poultry is Georgia's largest agricultural industry. The agribusiness complex related to poultry in Georgia is a multi-million dollar industry and is the largest employer in the agricultural sector. Students who major in poultry science have excellent opportunities for employment and career advancement.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area C: SPCM 1100 or 1500	
Preferred courses in Area D: BIOL 1107-1107L, CHEM 1211, 1211L, and 3 hours from CSCI 1100-1100L, 1210; MATH 2200, 2200L, 2210, 2210L; STAT 2000, 2210	
Area F:	18
BIOL 1108-1108L; CHEM 1212, 1212L, 2100 or 2211, 2100L or 2211L ; PHYS 1010 or 1111-1111L; POUL 2020-2020L, 2040	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

The following scholarships are available for Poultry Science majors: Mr. and Mrs. J. B. Gay Memorial Fund; Roy and Maye Durr Scholarship; Assist Scholarship Fund; Harrison Poultry Science Scholarship; Till M. Huston Scholarship; Charles M. Rose Memorial Scholarship (Graduate Student).

Internships

Internships are available but not required.

Minor in Poultry Science

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Pre-Professional Programs

See the Pre-Professional Programs section, page 293, for information on programs in Pre-Journalism, Pre-Law, Pre-Medicine, Pre-Dentistry, Pre-Optometry, Pre-Nursing, Pre-Pharmacy, Pre-Theology, and Pre-Veterinary Medicine.

Psychology

Degree
Bachelor of Science (B.S.)

Contact Person
Dr. David Shaffer, Chair
Undergraduate Studies Committee
dshaffer@arches.uga.edu
(706) 542-3073

Department
Department of Psychology
College of Arts and Sciences

Description of the Program

The major in psychology is designed to convey knowledge about the phenomena, laws, and theories of behavior and mental processes, as well as the experimental methods necessary to acquire that knowledge.

Career Opportunities

Opportunities for graduates include careers in industrial, government, and other organizational settings; mental health settings; college/university teaching and research; and other professional areas.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F. Prospective Psychology majors must have the following three prerequisites for PSYC 2980 (the first course in the major): PSYC 1101, STAT 2000 (or MATH 2200), and BIOL 1103, 1103L (or 1107-1107L) or Honors equivalents. The GPA for these three courses must be at least 2.3 with no grade lower than a C.

Expectations of Transfer Students

Transfer students must have certain prerequisites for the first course in the major (see Entrance Requirements). No courses transferred at the

2000 level or lower, except PSYC 2980 and PSYC 2990, can be used as credit toward the major.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area D: BIOL 1103, 1103L or 1107-1107L, any other lab science course, and STAT 2000	
Preferred course in Area E: PSYC 1101	
Area F:	18
BIOL 1103, 1103L or 1107-1107L; BIOL 1104, 1104L or 1108-1108L; PSYC 1101 (if not taken in Area E); STAT 2000 (if not taken in Area D)	
Choose one 1000/2000-level physical science course from ASTR, CHEM, GEOG, GEOL, PHYS	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Psychology

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Public Relations

Degree
Bachelor of Arts in Journalism (A.B.J.)

Contact Person
Dean M. Krugman
Department Head
dkrugman@arches.uga.edu
(706) 542-4791

Department
Advertising and Public Relations
College of Journalism and Mass Communication

Description of the Program

This program is designed to train students as analysts, creative thinkers, writers, planners and policy makers in public relations.

Career Opportunities

Career opportunities include entry-level positions in public relations such as corporate relations, image management and other forms of mediated persuasion.

Entrance Requirements

Applications are accepted only from students who have met minimum requirements in number of credit hours (at least 60 semester hours and satisfactory completion of Areas A-F of the Core Curriculum which includes foreign language at the second and third level and micro or macro economics), cumulative and overall grade point averages of at least 2.5, and English proficiency (recentered SATV score of at least 650, ACTV score of at least 30, or at least 77 on an English proficiency test administered by UGA's Testing Center). Meeting *minimum* requirements assures consideration but is not a guarantee of admission.

A point system based on academic achievement and test scores determines a student's standing among other applicants. Those presenting the highest qualifications are accepted each semester of the academic year.

Expectations of Transfer Students

The academic program for the A.B.J. degree consists of two parts: Areas A-F of the core curriculum (which includes foreign language at the second and third levels and micro or macro economics) taken during the freshman and sophomore years at UGA or another institution and the professional program taken after formal admission to the Grady College. Pre-Journalism students at the University of Georgia are enrolled in the Franklin College of Arts and Sciences.

Admission to the University of Georgia is not a guarantee of admission to the Grady College of Journalism and Mass Communication. A maximum number of spaces in each major is determined by the availability of teaching staff, classroom space, lab facilities and other resources. In reaching its decisions on how many students may be admitted each semester, the Admissions Committee is governed by the number already enrolled in each major, the number expected to graduate and the number applying. Grade point averages and test scores are the primary measures upon which admission decisions are based. It is recognized that the inclusion of talented students of diverse international and racial backgrounds is an indispensable part of the educational process and the Committee considers the need for such diversity in reaching its decisions. See Entrance Requirements.

Applications must be submitted directly to the Office of Undergraduate Services, Room 201, Grady College of Journalism and Mass Communication. The deadline is 4:00 p.m. on Friday of the second full week of classes.

Special Requirements

No more than two courses or seven semester credit hours in journalism and mass communication courses earned before admission to the College, whether at UGA or another institution, may be applied toward satisfaction of requirements for the A.B.J. degree. At least 20 semester credit hours of journalism and mass communication courses which satisfy A.B.J. degree credit must be earned at the University of Georgia.

A total of 121 semester hours (includes one hour PE) must be successfully completed to earn the A.B.J. degree. At least 90 semester hours must be taken outside the college, of which at least 65 must be in liberal arts and sciences courses. No more than 31 semester credit hours in journalism and mass communication courses may be applied toward requirements for the Public Relations major.

A grade of C or higher must be earned in any journalism and mass communication course which counts toward satisfaction of requirements for the A.B.J. degree.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: One literature course from CLAS, CMLT, ENGL	
Preferred course in Area D: STAT 2000	
Preferred courses in Area E: ANTH 1102 or GEOG 1125	
Area F:	18
Foreign language sequence through the third semester	
ECON 2105 or 2106	
Choose 9 hours of 1000/2000-level courses from ANTH, ARTS, CLAS, CMLT, DRAM, ENGL, GEOG, HIST, PHIL, POLS, PSYC, RELI, SOCI, SPCM, STAT	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Some courses may require the purchase of a supply card from the University bookstore.

Scholarships

About 30 undergraduate scholarships are administered by the Grady College each academic year. A general application submitted during the spring semester assures consideration for any of the scholarships for which the applicant is qualified.

Application forms may be obtained in the Office of Undergraduate Servcies, Room 201, Grady College of Journalism and Mass Communication.

Internships

Valuable practical experience is gained by serving internships. Although not required, internships are considered essential to a student's total educational experience and greatly enhance job opportunities upon graduation. Academic credit may be earned for successful completion of an internship if:

1. Advance approval is received from the student's department. A written request must be submitted and include a job description, length of internship, name of supervisor and rate of pay. Also, a letter verifying the internship offer must be submitted by the employer prior to the first day of the semester in which the internship is served.
2. Certain basic courses as determined by the department have been completed.
3. The internship covers a minimum number of weeks of full-time employment as determined by the department.
4. During the semester of the internship the student registers concurrently for ADPR 5011, which is included in the maximum semester hours of journalism and mass communication credit that may be earned toward the Public Relations major.
5. A written report is submitted by the employer prior to the last day of the semester in which the internship is served describing the intern's duties and the quality of performance.
6. A final, written report of week-by-week activities is submitted by the student to the department prior to the last day of the semester in which the internship is served.

Publication Management

Degree
Bachelor of Arts in Journalism (A.B.J.)

Contact Person
Dr. Kent Middleton
Department Head
kmiddlet@arches.uga.edu
(706) 542-5030

Department
Journalism
College of Journalism and Mass Communication

Description of the Program

The Publication Management major is designed to help students prepare for careers in management at newspapers, magazines, or other print media.

Career Opportunities

Publication Management graduates typically begin their careers as reporters, writers, copy editors, layout and design specialists, or in beginning level management positions in business, advertising, or circulation departments of print media

Entrance Requirements

Applications are accepted only from students who have met minimum requirements in number of credit hours (at least 60 semester hours and satisfactory completion of Area A-F of the Core Curriculum which includes foreign language at the second and third levels and micro or macro economics), cumulative and overall grade point averages of at least 2.5, and English proficiency (recentered SATV score of at least 650, ACTV score of at least 30 or at least 77 on an English proficiency test administered by UGA's Testing Center). Meeting *minimum* requirements assures consideration but is not a guarantee of admission.

A point system based on academic achievement and test scores determines a student's standing among other applicants. Those presenting the highest qualifications are accepted each semester of the academic year.

Expectations of Transfer Students

The academic program for the A.B.J. degree consists of two parts: Areas A-F of the core curriculum (which includes foreign language at the second and third levels and micro or macro economics) taken during the freshman and sophomore years at UGA or another institution and the professional program taken after formal admission to the Grady College. Pre-Journalism students at the University of Georgia are enrolled in the Franklin College of Arts and Sciences.

Admission to the University of Georgia is not a guarantee of admission to the Grady College of Journalism and Mass Communication. A maximum number of spaces in each major is determined by the availability of teaching staff, classroom space, lab facilities and other resources. In reaching its decisions on how many students may be admitted each semester, the Admissions Committee is governed by the number already enrolled in each major, the number expected to graduate and the number applying. Grade point averages and test scores are the primary measures upon which admission decisions are based. It is recognized that the inclusion of talented students of diverse international and racial backgrounds is an indispensable part of the educational process and the Committee considers the need for such diversity in reaching its decisions. See Entrance Requirements.

Applications must be submitted directly to the Office of Undergraduate Services, Room 201, College of Journalism and Mass Communication. The deadline is 4:00 p.m. on Friday of the second full week of classes.

Special Requirements

No more than two courses or seven semester credit hours in journalism and mass communication courses earned before admission to the College, whether at UGA or another institution, may be applied toward satisfaction of requirements for the A.B.J. degree. At least 20 semester credit hours of journalism and mass communication courses which satisfy A.B.J. degree credit must be earned at the University of Georgia.

A total of 121 semester hours (includes one hour PE) must be successfully completed to earn the A.B.J. degree. At least 90 semester hours must be taken outside the college, of which at least 65 must be in liberal arts and sciences courses. No more than 30-32 semester credit hours in journalism and mass communication courses may be applied toward requirements for the Publication Management major.

A grade of C or higher must be earned in any journalism and mass communication course which counts toward satisfaction of requirements for the A.B.J. degree.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: One literature course from CLAS, CMLT, ENGL	
Preferred course in Area D: STAT 2000	
Preferred courses in Area E: ANTH 1102 or GEOG 1125	
Area F:	18
Foreign language sequence through the third semester	
ECON 2105 or 2106	
Choose 9 hours of 1000/2000-level courses from ANTH, ARTS, CLAS, CMLT, DRAM, ENGL, GEOG, HIST, PHIL, POLS, PSYC, RELI, SOCI, SPCM, STAT	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Some courses may require the purchase of a supply card from the University bookstore.

Scholarships

About 30 undergraduate scholarships are administered by the Grady College each academic year. A general application submitted during the spring semester assures consideration for any of the scholarships for which the applicant is qualified.

Application forms may be obtained in the Office of Undergraduate Services, Room 201, Grady College of Journalism and Mass Communication.

Internships

Valuable practical experience is gained by serving an internship. Although not required, internships are considered important to a student's total educational experience and greatly enhance job opportunities upon graduation. Academic credit may be earned for successful completion of an internship if:

1. Advance approval is received from the department. A written request must be submitted that includes a job description, length of internship, name of supervisor and rate of pay. Also, a letter verifying the internship offer must be submitted by the employer prior to the first day of the semester in which the internship is served.
2. Certain basic courses as determined by the department have been completed.
3. The internship covers a minimum number of weeks of full-time employment as determined by the department.
4. During the semester of the internship the student registers concurrently for JOUR 5010, which is included in the maximum semester hours of journalism and mass communication credit that may be earned for the Publication Management major.
5. A written report is submitted by the employer prior to the last day of the semester in which the internship is served describing the intern's duties and the quality of performance.
6. A final, written report of week-by-week activities is submitted by the student to the department prior to the last day of the semester in which the internship is served.

Real Estate

Degree
Bachelor of Business Administration (B.B.A.)

Contact Person
Renee Dobbs
Advisor
(706) 542-2308

Department
Insurance, Legal Studies, and Real Estate
Terry College of Business

Description of the Program

The major offers a background for students planning careers in real estate sales, leasing, management, or appraising. Real Estate is the study of site selection, acquisition (lease or purchase), management and disposition of real property.

Career Opportunities

Potential career positions include junior appraiser, lease negotiator, leasing agent, sales associate, and right of way agent.

Entrance Requirements and Expectations of Transfer Students

Students intending to pursue this major must meet the following requirements: completion of 60 semester hours, completion of Core Areas A-E, completion of Area F for the B.B.A. degree, and achievement of an overall GPA of 2.6. Students may not enroll in the Terry College of Business while on academic probation or dismissal from another college.

Special Requirements

In addition to the UGA residence policy, B.B.A. students must complete at least 30 semester hours as students in the Terry College. Students are also expected to complete all major courses in residence. In some cases, with departmental permission, a student may receive transfer credit for one major course.

Grades of 2.0 in the following are required for B.B.A. degree certification: ENGL 1101 and 1102 combined, major courses, business cumulative GPA, and the UGA cumulative GPA.

Program Requirements

Semester Core Curriculum	Hours
Area A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)	
Preferred courses in Area D: MATH 1113 or 2200, 2200L (take under general electives if not taken in Area D)	
Preferred courses in Area E: ECON 2100 or 2200 (take under general electives if not taken in Area E)	
Area F:	18
ACCT 2101, 2102; ECON 2105, 2106; LEGL 2700; MIST 2090	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Voluntary membership in the Real Estate Society and inclusion in the resume book involves a small fee.

Scholarships

The Real Estate Society sponsors scholarships each semester.

Internships

Internships may be done for credit and are encouraged.

Recreation and Leisure Studies

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Douglas A. Kleiber
Department Head
dkleiber@arches.uga.edu
(706) 542-5064

Department
Recreation and Leisure Studies
College of Education

Description of the Program

The Department of Recreation and Leisure Studies Undergraduate Program prepares students for positions in recreation, parks and leisure services. Students have the opportunity to specialize in one of three areas: administration of leisure services, recreation resource management, or therapeutic recreation. The program of study is generally divided into the general university core, major core courses, and emphasis area course work. All students must complete practica, work experience and an internship related to the student's emphasis area.

Career Opportunities

Students in the Administration of Leisure Services emphasis area have career opportunities in the administration and management of park and recreation agencies, health and fitness, corporate recreation and other public, private, civic, and social agencies. Students in the Therapeutic Recreation emphasis area have career opportunities as Therapeutic Recreation Specialists in rehabilitation centers, long term care facilities, psychiatric facilities, senior centers and other community facilities. Students in the Recreation Resource Management emphasis area have career opportunities in national, state and county parks, nature centers, environmental education centers, and wildlife preserves as administrators, interpreters, environmental educators, park rangers or recreation planners.

Entrance Requirements and Expectations of Transfer Students

Entrance requirements include completion of Core Areas A-E and Area F and an overall GPA of 2.0 (0-30 semester hours), 2.1 (31-60 semester hours), 2.2 (61-90 semester hours), or 2.3 (91 or more semester hours). The program for Recreation and Leisure Studies can be entered only at the beginning of fall semester.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: SPCM 1100	
Preferred courses in Area D: BIOL 1103, 1103L (Therapeutic Recreation); CSCI 1100-1100L (Administration of Leisure Services); GEOG 1112, 1112L and 1113, 1113L or GEOL 1121, 1121L and 1122, 1122L (Recreation Resource Management)	
Preferred courses in Area E: PSYC 1101 and SOCI 1101	
Area F:	18
HPRB 1710; MIST 2090 or CSCI 1100-1100L; RLST 2030; SPCM 1100	
Choose two courses from the following three options:	
EPSY 2020 or *CHFD 2950-2950L	
*PSYC 1101	
SOCI 1101 or 1600	
*CHFD 2950-2950L and PSYC 1101 are prerequisites for the Therapeutic Recreation Area of Emphasis.	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

Scholarship information may be obtained from Leisure Careers Foundation, Georgia Recreation and Parks Association, 1285 Parker Road, Conyers, GA 30207-5957

Cooperative Education Programs

Cooperative Education Programs are available through the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers.

Religion

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Russell Kirkland
Undergraduate Coordinator
kirkland@arches.uga.edu
(706) 542-2880

Department
Religion
College of Arts and Sciences

Description of the Program

The major in religion provides a broad academic study of religion from a humanistic point of view. It covers the principal religions of the world, including Judaism, Christianity, Islam, Hinduism, Buddhism, Jainism, Taoism, Confucianism, and Shintoism. In addition, it offers courses in African-American religion and native American religion, as well as programs in classical Hebrew and Arabic. Comparative studies are strongly encouraged, the major requiring course work in two or more areas of concentration. The program is located in the College of Arts and Sciences and plays an important role in the Humanities and the Social Sciences. It treats religious studies as an educational matter only, having no doctrinal preference or denomination orientation. Its focus is on the historical, political, sociological, and philosophical aspects of religion.

Career Opportunities

Career opportunities for a major in religion encompass a broad range of professions, including religious ministry, teaching, law, business, government, and law enforcement. In addition, a major in religion provides a sound basis for doing graduate work in many other academic fields.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Transfer students may transfer two upper division courses in religion to apply toward the A.B.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
One course from RELI 1001, 1002, 1003, 2004; RELI (AFAM) 2005	
Choose five courses from Literature, History, Foreign Language (1st semester), Art, Drama, Music, Philosophy, Classics	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Religion

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Risk Management and Insurance

Degree
Bachelor of Business Administration (B.B.A.)

Contact Person
Renee Dobbs
Advisor
(706) 542-2308

Department
Insurance, Legal Studies, and Real Estate
Terry College of Business

Description of the Program

The major offers a unique program of study designed to give the student a broad understanding of the roles and functions of risk-bearing institutions, knowledge of basic principles necessary for adequately managing economic risk, and the opportunity for professional advancement in the field of risk management and insurance.

Career Opportunities

Potential career positions for the student with a major in risk management and insurance include risk analyst, risk manager, underwriter, employee benefits analyst, insurance administrator, claims adjuster, agent, and loss control specialist, to name a few.

Entrance Requirements and Expectations of Transfer Students

Students intending to pursue this major must meet the following requirements: completion of 60 semester hours, completion of Core Areas A-E, completion of Area F for the B.B.A. degree, and achievement of an overall GPA of 2.6. Students may not enroll in the Terry College of Business while on academic probation or dismissal from another college.

Special Requirements

In addition to the UGA residence policy, B.B.A. students must complete at least 30 semester hours as students in the Terry College. Students are also expected to complete all major courses in residence. In some cases, with departmental permission, a student may receive transfer credit for one major course.

Grades of 2.0 in the following are required for B.B.A. degree certification: ENGL 1101 and 1102 combined, major courses, business cumulative GPA, and the UGA cumulative GPA.

Program Requirements

Semester Core Curriculum	**Hours**
Area A-E:	42
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: SPCM 1100 or 1500 (take under general electives if not taken in Area C)	
Preferred courses in Area D: MATH 1113 or 2200, 2200L(take under general electives if not taken in Area D)	
Preferred courses in Area E: ECON 2100 or 2200 (take under general electives if not taken in Area E)	
Area F:	18
ACCT 2101, 2102; ECON 2105, 2106; LEGL 2700; MIST 2090	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Fees

Voluntary membership in the Insurance Society, Gamma Iota Sigma, and inclusion in the resume book involves a small fee.

Scholarships

The Insurance Society and Gamma Iota Sigma sponsor scholarships each semester.

Internships

Internships may be done for credit and are encouraged.

Romance Languages

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Noel Fallows
(706) 542-1075

Department
Romance Languages
College of Arts and Sciences

Description of the Program

Students majoring in Romance languages will take courses that combine the study of literature, language, culture, and linguistics, which will lead to a development of language proficiency and an understanding of the cultures of areas of the world where these languages are spoken.

Career Opportunities

Many students majoring in Romance Languages will become teachers or go on to graduate school, but proficiency in two foreign languages also helps majors find employment in the public and private sectors.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Placement Test

A student continuing a language taken in high school must take either the language achievement test of the College Entrance Examination Board or the placement test administered by the University of Georgia Counseling and Testing Center. Students will be placed in the appropriate course on the basis of their scores and other pertinent information. The Advanced Placement examinations in Spanish and French Language and Literature may also be submitted for placement and possible credit.

Expectations of Transfer Students

For one of the two languages chosen, four beginning and intermediate semester language courses equivalent to UGA FREN/ITAL/PORT/SPAN 1001-2002 are required. Study abroad courses can be used to fulfill part or all of these prerequisites, upon permission of advisors in the department.

Special Requirements

A minimum grade of C is required in course work for this major.

No student may receive credit for any course which is a prerequisite to a course for which college credit has already been received. Exceptions may be made only by the head of the department.

Certain courses in the Department of Romance Languages are not open to native speakers of that language. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was French, Italian, Portuguese, or Spanish.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	

Area F:	18
2001 (in major and minor language); 2002 (in major and minor language); LING 2100; choose three hours from the follwing (waived courses with no hourly credit do not count): AFST(ANTH)(CMLT)(GEOG)(HIST)(SOCI) 2100; ARHI 2100; CLAS 1000, 1010, 1020; CMLT 2210, 2220; DRAM 2000, 2120; ENGL 2310, 2320, 2400; HIST 2221, 2222, 2301, 2302, 2502; ITAL 2500, 2600; MUSI 2020; PHIL 1000; PORT 2600; RELI 1001, 1002, 1003, ROML 2550; SPAN 2550; WMST 1110-1110D, 2010; 1000/2000-level courses in any language; 1000/2000-level foreign language study abroad courses	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Study Abroad

The Department of Romance Languages encourages all students to participate in an accredited study abroad program for an academic year, a semester, or the summer. Prior departmental approval is required for credit. Contact the Office of International Education (542-7903) for information about programs. Check with the department for the maximum number of hours that will count for a major or minor.

Minor in French, Italian, Portuguese, or Spanish

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Russian

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Paul Popov
ppopov@arches.uga.edu
(706) 542-2442

Department
Germanic and Slavic Languages
College of Arts and Sciences

Description of the Program

The undergraduate program in Russian is designed to provide students with communicative proficiency in the Russian language and knowledge of important aspects of Russian culture.

Career Opportunities

Russian is the first language of approximately 150 million people and has long served as a lingua franca for millions more in the former republics of the Soviet Union and the countries of Eastern Europe. Russian continues to play an important role in global politics, and there is a wide variety of career opportunities in both governmental and non-governmental organizations with an international focus. Russia's reentry into the world economic system has also opened up a vast and largely unexploited market for Western goods and services, and business opportunities in the region can only increase over time. Furthermore, most large employers in the U.S. are international corporations which need employees who have the knowledge and experience to function successfully in foreign settings and to deal with their international business partners; foreign language majors are a definite asset to such companies.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F. RUSS 2002 is a prerequisite for upper-division courses.

Expectations of Transfer Students

Students transferring as juniors should have completed four semesters of Russian study equivalent to UGA courses RUSS 1001-2002.

Special Requirements

Students must earn a minimum grade of C in each course. With permission of the department, up to six semester hours of upper-division transfer credit may be applied towards fulfillment of the major requirements; otherwise, all courses fulfilling the major requirements must be taken in residency.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
RUSS 2001, 2002; LING 2100	
Nine hours from the following areas: beginning/intermediate courses in a second foreign language, art, music, theater, literature, history, geography, anthropology, economics, international studies, linguistics, philosophy, communications and political science	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Russian
Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Science Education

Degree
Bachelor of Science in Education (B.S.Ed)

Contact Person
Thomas R. Koballa, Jr.
Department Head
tkoballa@coe.uga.edu
(706) 542-1763

Department
Science Education
College of Education

Description of the Program
This program prepares students to teach biology, chemistry, earth science, or physics in grades 7-12.

Career Opportunities
Students in this major prepare for careers as secondary/middle school science teachers.

Entrance Requirements
Entrance requirements include completion of Core Areas A-E and Area F; a passing score on Praxis I; an overall GPA of 2.0 (0-30 semester hours), 2.1 (31-60 semester hours), 2.2 (61-90 semester hours), or 2.3 (91 or more semester hours); completion of CHEM 1211, 1211L, 1212, 1212L, MATH 2200, 2200L with a grade of C or better; submission of an essay expressing philosophy of science teaching and reasons for wanting to become a science teacher; and submission of a portfolio documenting a minimum of 20 hours of preprofessional experience. An overall GPA of 2.5 is required for admission to teacher education.

Expectations of Transfer Students
Transfer students must meet core requirements of the University of Georgia.

Special Requirements
Admission into the School of Teacher Education is required.

Program Requirements
Semester Core Curriculum	Hours
Areas A-E:	42

See Core Curriculum
Required courses in Area A: ENGL 1101, 1102, and MATH 1113
Preferred courses in Area D: CHEM 1211, 1211L, 1212, 1212L, and MATH 2200, 2200L

Area F:	18

EFND 2030; EPSY 2020; PHYS 1111-1111Lor 1211-1211L*, 1112-1112Lor 1212-1212L*; SPED 2000
*These courses are prerequisites for required courses in the Chemistry and Physics Areas of Emphasis.

Major Requirements	60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required	**120**

Social Science Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Michelle McFalls
Academic Advisor
(706) 542-7265

Department
Social Science Education
College of Education

Description of the Program
The program prepares teachers for social science/social studies teaching positions in grades 7-12 and meets Georgia Professional Standards Commission initial teacher certification requirements. Students may choose to meet the requirements for the following certification categories: broad field social sciences, history, geography, political science, economics.

Career Opportunities
In social science/social studies education, the quantity of teachers supplied exceeds the quantity demanded, although in specific locales the imbalance is larger or smaller. Because metropolitan and suburban school systems are more attractive to teacher candidates than small town and rural school systems, job markets are more competitive in urban areas. Opportunities in social science/social studies education are related to academic performance, general aptitude, character, personality, job search strategies and effort, and willingness to move to the location of job openings. Social studies teachers who also can serve as coaches or provide other services schools need compete better in the current job market.

Entrance Requirements
Entrance requirements include completion of Core Areas A-E and Area F, a passing score on Praxis

I, an overall GPA of 2.5, field experience (ESOC 2450), and submission of a video presentation and essay.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area D: GEOG 1112, 1112L, 1113, 1113L	
Preferred course in Area E: ANTH 1102	
Area F:	18
EFND 2030; EPSY 2020; SPED 2000	
Choose 9 hours from ANTH 1102; ECON 2105, 2106; GEOG 1101, HIST 2111, 2112; POLS 1101; PSYC 1101; SOCI 1101	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

The Hansing Scholarship is available to students in this major.

Social Work

Degree
Bachelor of Social Work (B.S.W.)

Contact person
Paul W. Ammons, Ed.D.
Director, Undergraduate Program
(706) 542-5466
pammons@arches.uga.edu

Department
School of Social Work

Description of the Program

The Bachelor of Social Work degree is the first professional social work degree. This program of study prepares the student for beginning professional practice as a social worker. The liberal arts base combined with appropriate professional courses provide the fundamental knowledge and skill needed to assume the role of a beginning practitioner. The appropriate social work value and ethical base necessary for professional practice is also a central part of the curriculum. The student exits the B.S.W. program as a generalist in the field of social services. The B.S.W. program is fully accredited by the Council on Social Work Education.

Career Opportunities

Graduates holding a baccalaureate degree in social work will be prepared for practice in a wide variety of human service programs, for example, hospital social services, juvenile corrections, programs for the elderly, mental health and retardation centers, and child protective services. These are but a few of the settings in which social workers provide clients with such services as counseling, problem solving, linkage with resources, case management, information, and referral.

Entrance Requirements

The academic program for students seeking the B.S.W. degree is composed of two parts: (1) Pre-professional enrollment for freshmen, sophomores, juniors and transfer students preparing for entry into the professional program; and, (2) the professional foundation program completed during the senior year.

Pre-professional enrollment is open to students meeting regular admission requirements at the University of Georgia. Admission to the professional foundation program occurs at the junior level. All students entering the professional foundation or senior year of study must have an overall and cumulative GPA of 2.5 and meet professional and liberal arts objectives of the program (see B.S.W. office for details). Prior to entering the professional program, all applicants must complete 50 clock hours of an advisor-approved human service experience and provide proof of professional liability insurance (see program director for details). In addition, throughout the program student evaluations will determine the student's compatibility to the professional practice of social work.

Expectations of Transfer Students

Students who plan to transfer to the B.S.W. program, in addition to meeting the requirements for entry into the professional program outlined above, should plan to complete the following courses or their equivalents as determined by the B.S.W. program director: PSYC 3230, STAT 2000, CHFD 2100, one course in multicultural studies, one course in women's studies, and one course in information technology. Transfer students should also plan to take the following courses as part of their core requirements: foreign language through the third semester, BIOL 1103, 1103L, SOWK 2101, 2154, PSYC 1101, and SOCI 1101.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	

Preferred courses in Area D: BIOL 1103, 1103L and STAT 2000

Preferred courses in Area E: PSYC 1101 and WMST 1110-1110D or 2010

Area F:	18

CHFD 2100; CSCI 1100-1100L; SOCI 1101 or 1600; SOWK 2154, 2155

Choose one course from: DRAM 2110; ENGL 2400; GEOG 1103; HIST 2051; HIST(AFST) 2052; MUSI 2080; PSYC 2100; PSYC(AFAM) 2150; RELI (AFAM) 2005; ROML 2550; SOCI (AFAM) 2020, 2820; SOCI 2850; SPCM 1800; SPCM (AFAM) 2810; WMST 1110-1110D, 2010

Major Requirements	60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required	**126**

Scholarships

The Heather Christina Wright Memorial Scholarship is available to qualified applicants. Selection is based on a desire and commitment to work with cancer patients and their families and financial need.

Sociology

Degree
Bachelor of Arts (A.B.)

Contact Person
Academic Director
klou@arches.uga.edu
(706) 542-3195

Department
Sociology
College of Arts and Sciences

Description of the Program

The major is designed to teach undergraduate students the sociological perspective, which has three central aspects. The first is the recognition of the preeminence of social structures and their influences, and of micro- and macro-level social processes. The second is the role of logic and of the scientific method in the acquisition of knowledge. The final aspect is the enduring link between the individual's experience and larger social processes.

In achieving its purpose, the sociology curriculum provides repeated experiences wherein students pose sociological questions and bring data to bear on them, making full use of computer technologies. Courses underscore the centrality of race, class, gender and culture in society and in sociological analysis. In the process, they expose students to comparative and international materials. More generally, the major develops student capacity for abstract thought, and for effective written and oral communication.

Career Opportunities

Sociology is a liberal-arts specialty that leads to a wide range of career options in government or business. In addition, a sociology major provides a solid foundation for further post-graduate study in law, business, and the social sciences.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Transfers into the major should have completed an introductory sociology course and STAT 2000. Students seeking credit for sociology courses taken at other colleges and universities must provide a syllabus for the course they wish to transfer and complete a *Request for Course Substitution/Prerequisite Waiver* form, obtained from the Academic Director's Office, Department of Sociology. No more than ten quarter hours or six semester hours of transfer credit will be applied toward requirements for the major.

Special Requirements

Sociology majors must complete Introductory Sociology (SOCI 1101) and STAT 2000. The statistics course is essential preparation for the rigorous methods requirement (SOCI 3600), which entails research design, data collection and data analysis. Sociology majors must also complete SOCI 3220 (Development of Sociological Theory), and six electives with a grade of C or better. Five of the six electives must be at the 3000 level or higher, and must be taken in residence.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Area F:	18

SOCI 1101; STAT 2000

Choose 11 hours from the following: two courses in a foreign language (through the third semester); AFAM 2000; AFST (ANTH) (CMLT) (GEOG) (HIST) (SOCI) 2100; ANTH 1102; CSCI 1100-1100L, 1210; ECON 2106, 2105, 2200; GEOG 1101, 1103, 1125; HIST 2111, 2112, 2701, 2702; LING 2100; MATH 1060, 1113, 2200, 2200L, 2210, 2210L; PHIL 1000, 1500, 2200; POLS 1101; PSYC 1101, 2100;

PSYC (AFAM) 2150; SOCI 1600; SOCI (AFAM) 2020, 2820; SOWK 2154; STAT 2210; WMST 1110-1110D, 2010

Major Requirements	60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required	**120**

Scholarships

The Phyllis Jenkins Barrow Scholarship is awarded annually to a major with senior status, UGA residence, and demonstrated academic performance. The Department also gives the Ray Payne Award to a major of senior status whose performance demonstrates commitment to sociology and a high potential for professional development in the discipline.

Study Abroad Programs

Juniors and seniors may study sociology for a semester or an academic year at the University of Leicester or the University of Lancaster in the United Kingdom. Students receive non-resident credit toward their degree at UGA and pay their normal UGA tuition. All costs of room and board, travel, and miscellaneous fees are borne by the student. Interested students should contact the Academic Diretor, Department of Sociology. The Sociology Department is also affiliated with the University of Georgia Summer Study Abroad Program in Verona, Italy. This program focuses on global environmental problems, and its courses provide resident credit. There is a set fee for this program that covers tuition, room and board, and travel. Interested students should contact the Academic Director.

Minor in Sociology

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Spanish

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Doris Kadish
(706) 542-1075

Department
Romance Languages
College of Arts and Sciences

Description of the Program

Students majoring in Spanish will take courses that combine the study of literature, language, culture, and linguistics, which will lead to a development of language proficiency and an understanding of the Spanish-speaking world.

Career Opportunities

Many students majoring in Spanish will become teachers or go on to graduate school, but proficiency in a foreign language also helps majors find employment in the public and private sectors.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Placement Test

A student continuing a language taken in high school must take either the language achievement test of the College Entrance Examination Board or the placement test administered by the University of Georgia Counseling and Testing Center. Students will be placed in the appropriate course on the basis of their scores and other pertinent information. The Advanced Placement examinations in Spanish Language and Literature may also be submitted for placement and possible credit.

Expectations of Transfer Students

Four semester courses or 14 semester hours of beginning and intermediate Spanish language course work, equivalent to UGA SPAN 1001-2002, are required. Study abroad courses can be used to fulfill part or all of these prerequisites, upon permission of advisors in the department.

Special Requirements

A minimum grade of C is required in course work for this major.

No student may receive credit for any course which is a prerequisite to a course for which college credit has already been received. Exceptions may be made only by the head of the department.

Certain courses in the Department of Romance Languages are not open to native speakers of that language. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was French, Italian, Portuguese, or Spanish.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
SPAN 2001, 2002; LING 2100; SPAN 2550 or ROML 2550	
Choose 6 hours from ARHI 2100; CLAS 1000, 1010, 1020; CMLT 2210, 2220; DRAM 2000, 2120; ENGL 2310, 2320, 2400; HIST 2221, 2222, 2301, 2302, 2502; ITAL 2500, 2600; MUSI 2020; PHIL 1000; PORT 2600; RELI	

1001, 1002, 1003; SPAN 1001, 1002; WMST 1110-1110D, 2010; 1000/2000-level courses in another language; 1000/2000-level foreign language study abroad courses

Major Requirements	60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required	**120**

Study Abroad

The Department of Romance Languages encourages all students to participate in an accredited study abroad program for an academic year, a semester, or the summer. Prior departmental approval is required for credit. Contact the Office of International Education (542-7903) for information about programs. Check with the department for the maximum number of hours that will count for a major or minor.

Minor in Spanish

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Special Education

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
John Langone
Department Head
jlangone@coe.uga.edu
(706) 542-4571

Department
Special Education
College of Education

Description of the Program

The undergraduate program in Special Education offers a Bachelor of Science in Education degree leading to initial state certification in interrelated. Students develop skills to work with individuals with mild intellectual and behavior disabilities. Students may choose to concentrate at the preschool/elementary level or middle/high school level. Students are required to take at least two field-based practicums and 10 hours of student teaching. These supervised field experiences should help the student develop skills in working with the preschool through high-school age range.

Career Opportunities

Career opportunities include teaching in public or private schools and educational consultancy.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F, a passing score on Praxis I, an overall grade point average of 2.7, completion of pre-major service hours, submission of a one-page purpose statement, and submission of a departmental application with a resume citing experiences and extracurricular activities working with individuals with special needs.

Being accepted as a major in special education does not guarantee permission to enroll in our "majors only" courses. Faculty use the following procedures to select students to complete the last two years of the program: During the fall semester of each year, the special education faculty will select 30 students (sophomores and above) to progress into the last two years of the program. The 30 students will be selected based on a rank ordering of all students with over 15 hours. The rank order will be based equally on (1) overall grade point average and (2) date of matriculation at the University. Students are encouraged to bring a copy of their acceptance letter to their first advisement appointment with a special education faculty member. A copy of this letter will be kept in the student's departmental file and will be used to document the matriculation date. Students not selected to continue in the program will be advised to change majors. Students may elect to be reconsidered the following year. Please note that reconsideration will be based on their rank order the following year. As students enter their junior year they must also document 60 hours of community involvement with children and adolescents (see special requirements).

Expectations of Transfer Students

Transfer students may write a letter to the department head appealing to be admitted to the group beginning the fall after their transfer. Students who have 15 semester hours and the required 2.7 overall GPA will be admitted to the groups as space becomes available through attrition.

Special Requirements

Special Education majors will document 60 hours of community involvement with children and adolescents prior to the junior year. The scope of the experiences can involve combinations of volunteerism in school (residential facilities, center-based programs, etc.), or community-based programs (tutoring, scouts, parks and recreation programs). The community service requirement is intended to give students reference points for course content, as well as to provide them with enriching experiences in settings that are comprised of diverse populations.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Area F:	18
EFND 2030; EPSY 2020; SPED 2000; 9 hours of electives (including SPED 2000L)	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

The Carol Jo Bishop Scholarship is available to students in this major.

Speech Communication

Degree
Bachelor of Arts (A.B.)

Contact Person
Ms. Jeanette Reid
Office Manager
jreid@arches.uga.edu
(706) 542-4893

Department
Speech Communication
College of Arts and Sciences

Description of the Program

Speech Communication majors receive instruction in both interpersonal communication and public communication. They acquire an understanding of both theory and application in these areas. They also become familiar with the methods of inquiry and research used by scholars in communication and rhetorical studies. Majors take one introductory class in public speaking and another in interpersonal communication. They are required to take a course in Empirical Research Methods (SPCM 3700) and also a methods course in Rhetorical Criticism (SPCM 3200). Majors complete their programs of study with four to seven upper-division courses in such topics as Nonverbal Communication, Persuasion, Health Communication, or Women and U.S. Public Discourse.

Career Opportunities

Applied and theoretic knowledge of communication processes are the most valuable foundations for any career. Graduates in Speech Communication pursue a wide variety of career options. Some of the most popular post-graduate careers include personnel management, organizational administration, sales, corporate education and training, and public relations in private or public sector organizations. A major in Speech Communication is also excellent preparation for law school, business school, or other professional and graduate training.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F and grades of C or better in STAT 2000 or 2210, SPCM 1100, and SPCM 1500.

Expectations of Transfer Students

Introductory courses in both interpersonal communication and public speaking are required as part of Core Area F. These may be transferred from other institutions, as may a sophomore-level course (e.g., advanced public speaking). The two required methodology classes must be taken at UGA. Upper division courses in the major must also be taken at UGA for credit toward the major. If taken at another institution, these courses can count for general elective credit.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: PHIL 1500	
Preferred courses in Area D: STAT 2000* or 2210*	
Area F:	18
SPCM 1100*, 1500*	
Choose one course from the following: Fourth semester of any foreign language; AFAM 2000; AFST (ANTH) (CMLT) (GEOG) (HIST) (SOCI) 2100; CMLT 2400; DRAM 2130; ENGL 2400; HIST (AFST) 2052; HIST 2222, 2502, 2560, 2602; PSYC 2100; PSYC (AFAM) 2150; RELI 1002, 2004; RELI(AFAM) 2005; RUSS 2050; SPCM 1800; SPCM(AFAM) 2810; WMST 1110-1110D, 2010	
Choose one course from CSCI 1100-1100L; MIST 2090; WMST(CSCI) 2040-2040L	
Choose one course from the following (if either is taken in Area D, an elective may be taken): STAT 2000*, 2210*	
Choose one course from CSCI 1210; ECON 1100, 2105, 2106; LING 2100; PHIL 1500, 2500, 2200, 2400	

*Grade of C or better required.

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Scholarships

The Olive M. Cone Scholarship is awarded each year to a Speech Communication major who exemplifies high academic achievement and commitment to the discipline. A limited number of scholarships are also available to students who participate in the Georgia Debate Union.

Internships

Internship credit may be available to students who exceed a 2.5 overall GPA, who exceed a 3.0 major GPA, who have completed SPCM 3700 and SPCM 3200, and who have also taken at least one 4000 level course in Speech Communication.

Minor in Speech Communication

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Sport Studies

Degree
Bachelor of Science in Education (B.S. Ed.)

Contact Person
Dr. Billy Hawkins
Sport Studies Coordinator
bhawkins@coe.uga.edu
(706) 542-4427

Department
Physical Education and Sport Studies
College of Education

Description of the Program

The major focuses on a study of sport from economic, political, cultural, philosophical, historical, sociological, behavioral, and artistic perspectives. In addition to this interdisciplinary foundation, students will select an area of interest in either sport leadership, sport business, or sport communication.

Career Opportunities

The burgeoning sport industry accounts for 4.5 million jobs and $100 billion in annual revenues. Job listings for sport-related careers increase daily in the retail sporting goods industry, sports facilities management, recreational sport management, sports broadcasting, and a variety of youth sports and athletic settings.

Entrance Requirements

This is a restricted major. All students must have completed Core Areas A-E and Area F and have a minimum overall GPA of at least 2.3 for acceptance into the program. A second consideration will be an application in which students will list their previous associations with sport and their future goals. To graduate, a student must have at least a 2.3 overall grade point average.

Expectations of Transfer Students

Students transferring at the junior level should have completed Areas A, C, D, E, and F in the UGA Core Curriculum.

Special Requirements

A grade of C or better is required for all courses included in Major Requirements and required courses in the Areas of Emphasis.

Program Requirements

Semester Core Curriculum **Hours**

Areas A-E: 42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Preferred course in Area C: PHIL 1000

Preferred courses in Area D: BIOL 1103, 1103L

Preferred courses in Area E: PSYC 1101; SOCI 1101

Area F: 18

CSCI 1100-1100L or MIST 2090; choose 12 hours from ACCT 2101**; ANTH 1102; CBIO 2200-2200L***,2210-2210L*; ECON 2105 or 2106; EXRS 2100***;PHIL 1000; PSYC 1101; SOCI 1101; three hours of 1000/2000-level electives

*Prerequisite for EXRS 3700

**Prerequisite for the Sport Business Area of Emphasis

***Prerequisite for the Sport Leadership Area of Emphasis

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Statistics

Degree
Bachelor of Arts (A.B.), Bachelor of Science (B.S.)

Contact person
Kermit Hutcheson
Undergraduate Director
hutch@stat.uga.edu
homepage: http:/www.stat.uga.edu
(706) 542-8232

Department
Statistics
College of Arts and Sciences

Description of the Program

A Statistics major will select a degree option of either Data Analysis or Mathematical Statistics. The Data Analysis option is designed to prepare an individual for a statistical career with only an undergraduate degree. The Mathematical Statistics option is designed to prepare an individual for graduate school and for further training in Statistics.

Career Opportunities

Employment opportunities exist in industry in a variety of fields and locations. Many students with a bachelor's degree in Statistics work as software developers, quality control analysts, data analysts and consultants.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F. Students must complete the following courses with a grade of C or better: STAT 2000; CSCI 1301; and MATH 2200, MATH 2210, or MATH 2500.

Expectations of Transfer Students

Transfer students are welcomed but will be expected to meet the entrance requirements.

Special Requirements

Specific course requirements vary for each area of specialization.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: CSCI 1301-1301L, MATH 2200, 2200L, 2210, 2210L, or STAT 2000	
Area F:	18
Choose 18 hours from CSCI 1301-1301L; MATH 2200, 2200L, 2210, 2210L, 2500; PHIL 2500; STAT 2000	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Statistics

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Technological Studies

Degree
Bachelor of Science in Education (B.S.Ed.)

Contact Person
Wanda Stitt-Gohdes
Undergraduate Coordinator
wlsg@arches.uga.edu
(706) 542-4078

Department
Occupational Studies
College of Education

Description of the Program

The technological studies program leads to teacher certification in technology education, trade and industrial, and health occupations education. The program has a core of courses which prepare individuals to understand technology and the impacts technology is having in the world today and in the future. Each specialization has a suggested core of courses that range from technical courses in the technical clusters of energy and power, production and communication to pedagogical courses that help individuals to prepare for teaching and industrial settings. Emphasis is placed on assisting individuals to develop the ability to think critically, create, learn, and problem solve in technological environments through structured learning experiences that utilize interdisciplinary, interactive, and inquiry-oriented instructional approaches.

Career Opportunities

Students are prepared as teachers for grades 7-12 and postsecondary technical institutes. This educational experience also provides an excellent background for those who may choose to move into the corporate training and development arena.

Entrance Requirements

Entrance requirements include completion of Core Areas A-E and Area F, a passing score on Praxis I, and an overall GPA of 2.0 (2.5 required for admission to teacher education).

Expectations of Transfer Students

Recommended courses for teacher certification in technology education include a physics sequence, college algebra and trigonometry, sociology or economics, and computer technology. For teacher certification in Trade and Industrial, demonstrated competence assessed by the National Occupational Competency Testing Institute (NOCTI) for Health Occupations, a health care credential, is required and computer literacy is recommended.

Special Requirements

A 2.5 GPA is required for admission to teacher education.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred courses in Area C: SPCM 1100 or 1500 (take in Area F if not taken in Area C)	
Preferred courses in Area D: MATH 1113 and PHYS 1111-1111L (take in Area F if not taken in Area D)	
Preferred courses in Area E: PSYC 1101 and SOCI 1101 (take under Area F if not taken in Area E)	
Area F:	18
EFND 2030; EPSY 2020; 12 hours of electives	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Internships

Supervised observations and participation in cooperating schools is required for all students. Full-time student teaching is required for certification.

Telecommunication Arts

Degree
Bachelor of Arts in Journalism (A.B.J.)

Contact Person
Dr. Alison F. Alexander
Department Head
alison@arches.uga.edu
(706) 542-3785

Department
Telecommunications
College of Journalism and Mass Communication

Description of the Program

This program is designed to train students in production, electronic media studies, and management emphases. The major provides students with professional courses of study in both the theory and practice of electronic media.

Career Opportunities

Traditional programming, management, and sales are being supplemented by opportunities in cable, corporate communications, production and post-production, and web and other new communications technologies.

Entrance Requirements

Applications are accepted only from students who have met minimum requirements in number of credit hours (at least 60 semester hours and satisfactory completion of Areas A-F of the Core Curriculum which includes foreign language at the second and third levels and micro or macro economics), cumulative and overall grade point averages of at least 2.5; and English proficiency (recentered SATV score of at least 650, ACTV score of at least 30 or at least 77 on an English proficiency test administered by UGA's Testing Center). Meeting *minimum* requirements assures consideration but is not a guarantee of admission.

A point system based on academic achievement and test scores determines a student's standing among other applicants. Those presenting the highest qualifications are accepted each semester of the academic year.

Expectations of Transfer Students

The academic program for the A.B.J. degree consists of two parts: Areas A-F of the core curriculum (which includes foreign language at the second and third levels and micro or macro economics) taken during the freshman and sophomore years at UGA or another institution and the professional program taken after formal admission to the Grady College. Pre-Journalism students at the University of Georgia are enrolled in the Franklin College of Arts and Sciences.

Admission to the University of Georgia is not a guarantee of admission to the Grady College of Journalism and Mass Communication. A maximum number of spaces in each major is determined by the availability of teaching staff, classroom space, lab facilities and other resources. In reaching its decisions on how many students may be admitted each semester, the Admissions Committee is governed by the number already enrolled in each major, the number expected to graduate and the number applying. Grade point averages and test scores are the primary measures upon which admission decisions are based. It is recognized that the inclusion of talented students of diverse international and racial backgrounds is an indispensable part of the educational process and the Committee considers the need for such diversity in reaching its decisions. See Entrance Requirements.

Applications must be submitted directly to the Office of Undergraduate Services, Room 201, College of Journalism and Mass Communication. The deadline is 4:00 p.m. on Friday of the second full week of classes.

Special Requirements

No more than two courses or seven semester credit hours in journalism and mass communication courses earned before admission to the Grady College, whether at UGA or another institution, may be applied toward satisfaction of requirements for the A.B.J. degree. At least 20 semester credit hours of journalism and mass communication courses which satisfy A.B.J. degree credit must be earned at the University of Georgia.

A total of 121 semester hours (includes one hour PE) must be successfully completed to earn the A.B.J. degree. At least 90 semester hours must be taken outside the college, of which at least 65 must be in liberal arts and sciences courses. No more than 30 semester credit hours in journalism and mass communication courses may be applied toward requirements for the Telecommunications major.

A grade of C or higher must be earned in any journalism and mass communication course which counts toward satisfaction of requirements for the A.B.J. degree.

Fees

Some courses require the purchase of a supply card from the University bookstore.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1101	
Preferred course in Area C: One literature course from CLAS, CMLT, ENGL	
Preferred course in Area D: STAT 2000	
Preferred courses in Area E: ANTH 1102 or GEOG 1125	
Area F:	18
Foreign language sequence through the third semester	
ECON 2105 or 2106	
Choose 9 hours of 1000/2000-level courses from ANTH, ARTS, CLAS, CMLT, DRAM, ENGL, GEOG, HIST, PHIL, POLS, PSYC, RELI, SOCI, SPCM, STAT	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Scholarships

The Grady College administers about 30 undergraduate scholarships. Students may submit a general application during the spring semester that assures them of consideration for any of the scholarships for which they qualify for the coming academic year.

Application forms may be obtained in the Office of Undergraduate Services, Room 201, Grady College of Journalism and Mass Communication.

Internships

Valuable practical experience is gained by serving internships. Although not required, internships are considered essential to a student's total educational experience and greatly enhance job opportunities upon graduation. Credit hours may be earned for successful completion of an internship if:

1. Advance approval is received from the student's department. A written request must be submitted that includes a job description, length of internship, name of supervisor and rate of pay. Also, a letter verifying the internship offer must be submitted by the employer prior to the first day of the semester in which the internship is served.
2. Certain basic courses as determined by the department have been completed.
3. The internship covers a minimum number of weeks of employment as determined by the department.
4. During the semester of the internship the student registers concurrently for TELE 5010, which is included in the maximum semester hours of journalism and mass communication credit that may be earned toward the Telecommunications major.
5. A written report is submitted by the employer prior to the last day of the semester in which the internship is served describing the intern's duties and the quality of performance.
6. A final, written report of week-by-week activities is submitted by the student to the department prior to the last day of the semester in which the internship is served.

Textile Science

Degree
Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Contact Person
Dr. Patricia Annis
Associate Professor
pannis@fcs.uga.edu,
(706) 542-4889

Department
Textiles, Merchandising and Interiors
College of Family and Consumer Sciences

Description of the Program

The undergraduate Textile Science curriculum in the Department of Textiles, Merchandising and Interiors is designed for students interested in theoretical and applied knowledge in the formation, characterization, and evaluation of textiles. The Textile Science program relies heavily on courses in chemistry, mathematics, physics, computer science, and statistics. Textile Science courses offered in the department include Textiles, Textile Testing, Advanced Textiles, Textile Dyeing, Chemical and Optical Analysis, Physical Analysis, and Textile Finishing Processes.

Career Opportunities

Careers are available in research, development, quality analysis and control, and product testing.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students tansferring into the Textile Science major should have fulfilled the core curriculum requirements.

Internships

Internships are available on a competitive basis, but not required. They are an important part of many students' programs of study.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 2200, 2200L	
Preferred course in Area C: SPCM 1100 or 2300	
Preferred courses in Area D: CHEM 1211, 1211L, CHEM 1212, 1212L, and CHEM 2211, 2211L (CHEM 1212, 1212L are prerequisites for upper division courses required in the major)	
Preferred course in Area E: ECON 2106 (If Environmental Literacy requirement is not satisfied under Area E, the requirement will have to be satisfied with an elective.)	
Area F:	18
CHFD 2100 or HACE 2100; CSCI 1100-1100L or MIST 2090; MATH 2210, 2210L; PHYS 1111-1111L or 1211-1211L; STAT 2000	
Major Requirements	60
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**120**

Minor in Textile Science

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Turfgrass Management

Degree
Bachelor of Science in Agriculture (B.S.A.)

Contact Persons
Dr. Keith Karnok
Professor
kkarnok@arches.uga.edu
(706) 542-0931

Dr. Bill Randle
Associate Professor
wrandle@arches.uga.edu
(706) 542-2471

Department
Crop and Soil Sciences; Horticulture
College of Agricultural and Environmental Sciences

Description of the Program

Turfgrass management is the study of the science and culture of fine grasses that are used on golf courses, athletic fields, home lawns, and other areas requiring an attractive but functional ground cover. Increasing interest in outdoor recreational activities as well as aesthetically appealing landscaped areas has created a demand for professional turfgrass managers. The turfgrass management major at the University of Georgia is unique in that it is the only 4-year turf program in the United States that is jointly administered by two departments. The combined effort of the departments of Crop and Soil Sciences and Horticulture provide greater resources to students in terms of laboratories, teaching equipment, demonstration field plots, faculty expertise, and course offerings.

The curriculum is designed for maximum flexibility that allows students the opportunity to select one of two paths depending on their interest and future goals. Both paths will enable students the ability to secure any of the jobs discussed above as well as to enter graduate school. Specifically, the curriculum educates students in the principles and applications of both applied and basic sciences necessary for the successful establishment and maintenance of fine turfgrass areas. Students completing the turfgrass management curriculum will be knowledgeable in all aspects of plant and soil science. Particular emphasis is placed on learning environmentally sound strategies for controlling common turfgrass pests such as weeds, insects, and diseases. A careful balance of applied and basic sciences with courses in economics, business management, and accounting combined with on-the-job training opportunities will prepare students for an exciting career in the turfgrass/landscape industry.

Career Opportunities

The turfgrass industry is one of the fastest growing industries in the United States. In Georgia, it is estimated at more than one billion dollars. Completion of the turfgrass management major will allow a student the opportunity to pursue a career in golf course, athletic field, park, school, and commercial grounds management. There are many openings in the relatively new chemical lawn care industry as well as with sod production, lawn maintenance, and landscaping firms. Other opportunities include the need for well-trained individuals in the areas of turfgrass seed, chemical, and equipment sales and service. Some graduates have obtained employment in the irrigation design and installation segment of the industry, while others have found challenging careers in university research, private consulting, or with the Cooperative Extension Service. The current and future outlook for job availability is excellent. For example, two-thirds of the respondents of a recent nationwide survey of 4-year turf programs indicated between 2 to 4 jobs per graduating student. Almost 40 percent of the respondents also indicated that they expected job availability to increase over the next several years. In short, the future looks extremely bright for careers in turfgrass management.

Entrance Requirements

Entry to this major requires completion of Core Areas A-E and Area F.

Program Requirements

Semester Core Curriculum	Hours
Areas A-E:	42

See Core Curriculum

Required courses in Area A: ENGL 1101, 1102, and MATH 1113

Preferred course in Area C: SPCM 1100 (take under general electives if not taken in Area C)

Preferred courses in Area D: BTNY 1210, 1210L; CHEM 1211, 1211L; CSCI 1100-1100L

Area F:	18

BTNY 1220, 1220L; CHEM 1212, 1212L, 2100, 2100L; CRSS 2010-2010L or HORT 2000; PHYS 1010 or 1111-1111L

Major Requirements	60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required	**120**

Scholarships

Numerous opportunities for financial assistance are available. These include the Georgia State Golf Association Scholarship; Agronomy Club Scholarship; Georgia Ag Chem Society Scholarship; Georgia Chapter American Society of Agronomy Scholarship; and the AgrEvo Turf Scholarship. Also, several scholarships are available to students in the College of Agricultural and Environmental Sciences. For more information, contact the Office of Academic Affairs in the College.

Internships

Numerous internship opportunities are available to provide Turfgrass Management students with training and experience.

Minor in Turfgrass Management

Contact the department for requirements or refer to the online bulletin at www.bulletin.uga.edu.

Veterinary Medicine

See Pre-Veterinary Medicine programs on pages 294 and 295 of this Bulletin, see the College of Veterinary Medicine on page 144, or contact the College for a copy of the *College of Veterinary Medicine Bulletin* for information on professional and graduate programs.

Wildlife

Degree
Bachelor of Science in Forest Resources (B.S.F.R.)

Contact Person
Bruce C. Bongarten
Associate Dean
bongarte@smokey.forestry.uga.edu
(706) 542-4284

Department
School of Forest Resources

Description of the Program

The Wildlife major meets the educational requirements for Certified Wildlife Biologists as stipulated by The Wildlife Society. Wildlife biologists determine the biological and ecological conditions required for maintenance of healthy populations of game and non-game species, tend these species, and manage their environments to meet wildlife conservation objectives. The course work is broad-based, furnishing an understanding of the interrelationships among the physical and biological elements of the natural environment, an appreciation of the social, political, and economic forces that influence wildlife management, and the ability to analyze natural resource problems to forge realistic solutions.

Career Opportunities

Graduates most often take employment in public land management or regulatory agencies, wildlife or environmental consulting firms, or conservation organizations. Detailed descriptions of the diverse career opportunities in wildlife biology are available from the Office of Undergraduate Programs.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F and an overall GPA of 2.5.

Admission to the Professional Program

Entry to the major requires admission to the Warnell School of Forest Resources in addition to admission to the University of Georgia. Application forms for admission to the Warnell School of Forest Resources are available from the Associate Dean's office. Students may apply for fall or spring semester admission. A maximum of 60 students will be admitted each semester. Applications for fall semester admission are due April 1. Applications for spring semester admission are due September 15. *(Note that these deadlines may be earlier than University of Georgia application deadlines).* To be eligible for admission to the Professional Program, students must have completed the 60 hour pre-Professional curriculum, except that up to 8 credits of electives (and/or SPCM 1100) may be deferred if an equal number of credits have been completed from the following courses: ECOL (FORS) 3260-3260L (Wildlife and Fisheries and Aquaculture majors only), FORS 3010-3010L, FORS 3020-3020L, and CRSS(FORS) 3060-3060L. For information on the admissions process, see the Warnell School of Forest Resources section of this Bulletin.

Expectations of Transfer Students

Entry to the major requires admission to the Warnell School of Forest Resources in addition to admission to the University of Georgia. Admission to the major is not granted until the 60 credit pre-Professional program is completed. Transfer students should contact the Associate Dean for Academic Programs, Warnell School of Forest Resources, for information on pre-Professional Program requirements and confirmation of transfer credit.

Special Requirements

The Wildlife major requires 123 semester credits: 63 in the Professional Program and 60 in the pre-Professional Program.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42
See Core Curriculum	
Required courses in Area A: ENGL 1101, 1102, and MATH 1113	
Preferred courses in Area D: BIOL 1107-1107L, CHEM 1211, 1211L, and MATH 2200, 2200L (take under major electives if not taken in Area D)	
Preferred course in Area E: ECON 2106 (take under major electives if not taken in Area E)	
Area F:	18
BIOL 1108-1108L; CHEM 1212, 1212L; SPCM 1100; STAT 2000; elective	
Major Requirements	63
For current requirements, refer to the online bulletin at www.bulletin.uga.edu.	
Total hours required	**123**

Fees

Tuition in the Professional Program is approximately 10% greater than for non-Professional programs.

Scholarships

In addition to the financial assistance offered through the University's Office of Student Financial Aid, a number of scholarships and awards are available specifically for undergraduate students in forest resources. These awards total about

$80,000 annually, and are made possible by donations from forest-related industries and organizations, and from alumni and other interested individuals.

Selection for these scholarships is based on academic achievement, leadership ability, and financial need. To be considered for most scholarships, students must have a resume on file in the Office of Undergraduate Programs. A few scholarships require a separate application form.

Internships and Cooperative Education

An active internship program gives students opportunity to supplement their classroom studies with practical experience in forest resource management. Students may work with private companies, landowners, conservation organizations, and federal and state agencies.

The school also offers a Cooperative Education Program with federal and state agencies such as the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Georgia Department of Natural Resources. Students may alternate semesters of off-campus work with semesters of on-campus study. Although we make every effort to facilitate cooperative education, the arrangement for such programs is usually left to student initiative.

Women's Studies

Degree
Bachelor of Arts (A.B.)

Contact Person
Dr. Mary Carruth
Assistant Director and Program Advisor
Women's Studies Program
mcarruth@arches.uga.edu
(706) 542-2846

Department
Women's Studies Program
College of Arts and Sciences
http://www.uga.edu/wsp

Description of the Program

Women's studies is an emerging field of scholarship that provides interdisciplinary perspectives on women, gender, and sexual orientation. In the past 30 years, scholars in many fields have recovered lost works and have provided new perspectives on the diversity of women's experiences and accomplishments, thereby transforming and expanding traditional curricula. At UGA, women's studies courses are taught by ten faculty members with joint appointments in the Women's Studies Program and eight other departments, and by other faculty from cooperating departments in several schools and colleges. Thus, students take courses with WMST and many other prefixes. (Because courses are not limited to those appearing in OASIS with the WMST prefix, it is important that students check with the program advisor each term for the full range of approved courses.) Students enrolled in the College of Arts and Sciences may major in women's studies. (Majors are required to minor or recommended to double major in another field.) Students in any school or college may pursue a minor or a certificate in women's studies. All women's studies students are encouraged to join the Women's Studies Student Organization (WSSO) which meets regularly for educational programs and social events. The annual Women's Studies Student Symposium draws participants from across campus. Planning for National Women's History Month in March provides undergraduates further opportunities for developing their organizational skills. The Friday Noon Speaker Series offers an additional extracurricular means for deepening understanding of women's issues, perspectives, and contributions.

Career Opportunities

The A.B. in Women's Studies is a liberal arts degree and therefore offers career opportunities in many areas, including law, women's health, education, counseling, public relations, politics, and business. It also offers a solid grounding for advanced work on the graduate level. A certificate or minor in Women's Studies complements and strengthens any academic major and opens opportunities in the above fields as well.

Entrance Requirements

Entry to the major requires completion of Core Areas A-E and Area F.

Expectations of Transfer Students

Students seeking credit for courses taken other colleges and universities must provide a syllabus for the course they wish to use and submit a petition form obtainable from the program advisor.

Special Requirements

Students must achieve a grade of C or better on all courses taken for the major, the certificate, and the minor.

Program Requirements

Semester Core Curriculum	**Hours**
Areas A-E:	42

Required courses in Area A: ENGL 1101, 1102, and MATH 1101

Preferred courses in Area D: STAT 2000 or 2210

Area F: 18

CSCI 1100-1100L or 1210 or WMST (CSCI) 2040-2040L; STAT 2000 or 2210 (unless taken in Area D); WMST 2010; two courses from Area C; one course from Area E

Major Requirements 60

For current requirements, refer to the online bulletin at www.bulletin.uga.edu.

Total hours required **120**

Internships and Cooperative Education

With permission of the program, students may enroll in WMST 5000, Internship.

Scholarships and Internships

The current issue of the *Directory of Financial Aid for Women* is available for student use in the Women's Studies Program library. This resource book contains information on scholarships, fellowships, loans, grants, awards, and internships set aside for women. Other opportunities are posted to the Women's Studies Program listserv and in the Women's Studies Program office as they are received.

Study Abroad

The Women's Studies Program, in cooperation with the Department of Romance Languages, will introduce a study abroad program in Costa Rica in summer semester 2000. In addition to Spanish language courses, students may enroll in courses taught in English on women and development and women and the environment. Home stays and study trips will be included. For complete information, contact the Director of the Women's Studies Program.

The Certificate in Women's Studies

See Undergraduate Certificate Programs. Students in any school or college may sign up for the Certificate with the Women's Studies Program advisor. It will be awarded upon completion of 18 semester hours of approved course work. All candidates must include (1) WMST 1110 (1110H) or WMST 2010 (2010H), and WMST 4010 in their programs of study. The 12 remaining hours will be drawn from an approved list of WMST and other departmental courses. Depending upon students' degree programs, courses chosen for the Certificate in Women's Studies may also count toward general studies, their majors, or their elective offerings. Certain restrictions apply: A grade of C or better is required in each course taken for the certificate. With the exception of WMST courses, no more than six semester hours may be taken in the same department (or have the same prefix). No more than six semester hours may be taken with the same WMST professor.

Minor in Women's Studies

Contact the department for requirements or refer to the online bulletin at *www.bulletin.uga.edu.*

Pre-Professional Programs

Pre-Journalism

The Henry W. Grady College of Journalism and Mass Communication enrolls undergraduate students in the junior and senior years only. Freshmen and sophomore students who plan to apply to the Grady College are admitted to, and advised in, the Franklin College as "pre-journalism" majors until they enter the Grady College or until the beginning of their junior year, whichever comes first. Academic advising for pre-journalism students takes place in 106 New College. Details regarding admission to and degree requirements of the Grady College appear in that section of this Bulletin.

Pre-Law (Franklin College of Arts and Sciences)

Advisor
Ms. Wanda F. Wilcox
106 New College

The University of Georgia does not offer a degree with a major in pre-law. Students may be accepted declaring pre-law as their intention, but they should work with their academic advisors to choose specific degrees and majors. All students enrolled in the Franklin College of Arts and Sciences who are interested in attending law school should seek advice from the pre-law advisor. Additionally, a Pre-Law Guide is available, in print in 106 New College and on-line at http://ben.franklin.uga.edu/saga/lawcont.htm.

Pre-Law (College of Agricultural and Environmental Sciences)

Advisor
Dr. Terence Centner
313D Conner Hall

The University of Georgia does not offer a degree with a major in pre-law; therefore, students should work with their academic advisors to choose a specific degree and major. The College of Agricultural and Environmental Sciences pre-law program provides a method for undergraduate students to prepare for law school while earning a degree in an existing field of agricultural and environmental science. In this manner, students can major in a relevant career-oriented scientific discipline while perfecting learning skills that will assist them in their advanced degree programs. The College of Agricultural and Environmental Sciences does not have a foreign language requirement.

Most law schools suggest exposure to other disciplines that are useful in practicing and studying law; therefore, students should incorporate functional courses from existing undergraduate programs of study into their schedules. Suggested majors in the College of Agricultural and Environmental Sciences include Agricultural Economics, Agribusiness, or Environmental Economics and Management.

Pre-Medicine, Pre-Dentistry, and Pre-Optometry (Franklin College of Arts and Sciences)

Coordinator, Premedical Studies Program
Dr. R. Alan Langford, M.D.
210 New College
Franklin College of Arts and Sciences

In almost all cases, baccalaureate degrees are required for admission to schools of medicine and dentistry. At The University of Georgia, "premed" and "pre-dent" are not majors, so students who plan to attend medical or dental school should select majors and follow regular degree programs. There is no one "best" major for students interested in these areas, but it is critical that course selection includes both those science courses needed to assure a good score on the standardized admissions tests and course prerequisites for admission to the medical or dental schools to which the student is interested in applying.

A booklet, "Guidelines for Premedical/Predental Students at UGA" is available. Additionally, helpful on-line web sites are: *www.franklin.uga.edu/premed* (UGA Premedical Studies Program), *www.biosci.uga.edu* (Division of Biological Sciences), *www.aamc.org* (Association of American Medical Colleges), *www.aads.jhu.edu* (American Association of Dental Schools), and *http://home.opted.org/asco* (Association of Schools and Colleges of Optometry).

Occasionally, students who demonstrate truly exceptional ability and performance are admitted to the Medical College of Georgia School of Medicine or School of Dentistry before completion of the baccalaureate degrees. If such students satisfy certain requirements, they *may* be awarded Bachelor of Science degrees, in Pre-Medicine or Pre-Dentistry, following the satisfactory completion of the first year of professional school.

Pre-Medicine (College of Agricultural and Environmental Sciences)

Contact
Office of Academic Affairs
College of Agricultural and Environmental Sciences
(706) 542-1611

In almost all cases, baccalaureate degrees are required for admission to schools of medicine. At The University of Georgia, "pre-med" is not a major, so students who plan to attend medical school should select a major and follow regular degree programs. It is critical that course selection includes both those science courses needed to assure a good score on the standardized admissions tests and course prerequisites for admission to the medical school to which the student is interested in applying.

In addition to meeting with their academic advisors, students will need to visit with the College of Agricultural and Environmental Sciences pre-med advisor. Students should contact the Office for Academic Affairs in 102 Conner Hall for that information after being enrolled.

Because of the stringent science requirement in our college, students may pursue one of several different majors to earn an undergraduate degree while applying to medical school, including Biological Science, Environmental Health Science, Entomology, Biological Engineering, Animal Health, Food Science, and others.

Pre-Nursing and Other Allied Health Sciences

Advisor
Ms. Jane G. Hudson
106 New College

The University of Georgia does not offer degrees in nursing, physical or occupational therapy, or any other allied health areas, but academic advising is available for students who wish to complete the freshmen and sophomore requirements for such programs prior to transferring to institutions which do offer these majors. Additionally, a complete Pre-Nursing Handbook can be found on the web at http://ben.franklin.uga.edu/saga/data/nurse/nursefr.htm.

Pre-Pharmacy

Advisor
Dr. Jeanne Prine
College of Pharmacy

To be admitted to the professional program in the College of Pharmacy, a student must have completed 60 semester hours of specified pre-pharmacy coursework. Applicants should take the Pharmacy College Admission Test during the Fall semester prior to the one in which they plan to enter the College of Pharmacy. Students with high academic averages and 60 semester hours of credit may be admitted with not more than 3 semester hours of deficiencies in non-science required courses, provided such deficiencies will be completed before the second professional year. For information concerning the pre-pharmacy curriculum, refer to the College of Pharmacy section of this Bulletin.

Pre-Theology

Students planning to enter theological seminaries following graduation from the University of Georgia should consult with the faculty advisor in the Department of Religion no later than the beginning of their junior years.

Pre-Veterinary Medicine (Franklin College of Arts and Sciences)

Academic advising information for Franklin College students who wish to complete baccalaureate degrees prior to entering colleges of veterinary medicine is available from **Ms. Jane G. Hudson, Senior Academic Advisor, Franklin College of Arts and Sciences, 106 New College.**

Occasionally, students are granted admission to the University of Georgia College of Veterinary Medicine prior to completion of their baccalaureate degrees. Such students may, after the successful completion of all baccalaureate degree core curricular requirements and of their first year of professional school, be awarded a B.S.- Pre-Veterinary Medicine degree from the Franklin

College of Arts and Sciences. Students considering this option should realize that admission to the University of Georgia College of Veterinary Medicine is highly competitive and would be well-advised to have an alternative plan in mind, i.e., the pursuit of a baccalaureate degree program with a specific major. For additional information about this program, students should consult the Admissions Information and Bulletin of the College of Veterinary Medicine or contact the Associate Dean for Academic Affairs, College of Veterinary Medicine.

Pre-Veterinary Medicine (College of Agricultural and Environmental Sciences)

Contact Person
Walter Britton
Professor and Undergraduate Coordinator
wmbritt@arches.uga.edu
phone: (706) 542-1366

Department
Poultry Science
College of Agricultural and Environmental Sciences

Description of the Program

Admission to the University of Georgia College of Veterinary Medicine requires a rigorous program of undergraduate study in the basic sciences. Students are encouraged to plan their program of undergraduate study carefully so that they will receive a Bachelor of Science in Agriculture whether or not they are later admitted to the College of Veterinary Medicine.

The College of Veterinary Medicine has a limited enrollment policy. Selection of the best qualified applicants for admission is the responsibility of a faculty committee within the College. The committee considers applicants who have met the minimum academic requirements including at least three years of study, or its equivalent, at an accredited college.

Students normally apply for admission to the College of Veterinary Medicine during their third year of study in the College of Agricultural and Environmental Sciences pre-veterinary medicine program. Students not admitted to Veterinary Medicine may continue their study in the College of Agricultural and Environmental Sciences for a fourth year to complete the requirements for the B.S.A. degree in any major they choose. Several degree programs within the College are compatible with the pre-veterinary medicine program.

The program of study will meet the dual objectives of completing the requirements for admission to the College of Veterinary Medicine and the requirements for a Bachelor of Science degree in the College of Agricultural and Environmental Sciences. Students should contact the Associate Dean for Academic Affairs, College of Veterinary Medicine, for a more detailed description of requirements for admission to that college.

Entrance Requirements

Most students pursuing a pre-veterinary medicine program of study choose the Animal Health major. However, pre-veterinary medicine study may also be completed by enrollment in several other related majors such as Animal Science, Biological Science, Dairy Science, Environmental Health Science, or Poultry Science.

Scholarships

Several scholarships are available to students in the College of Agricultural and Environmental Sciences. For more information, contact the Office of Academic Affairs in the College.

Internships

Internships are available but not required.

Undergraduate Certificate Programs

African Studies

Contact Person
B. Ikubolajeh Logan
Director, African Studies Program
(706) 542-2856

Department
Geography
College of Arts and Sciences

Description of the Program

The certificate program in African Studies is designed for the student who wishes to learn about Africa generally, and to focus on a specific sociocultural aspect of the of the region, for example, language, religion, or literature. In addition to providing regional education, the certificate program offers students an opportunity to complement majors in a wide array of disciplines including anthropology, sociology, geography, business, journalism, and education. Students can simultaneously satisfy the requirements of the certificate program while completing their college and university electives requirements.

For specific program requirements, contact the director of the African Studies Program.

African American Studies

Contact Person
Dr. R. Baxter Miller
Director, Institute for African American Studies

Description of the Program

The Institute for African American Studies provides a central focus for study of the impact of African American contributions upon human culture. The Institute is dedicated to creative research on the achievements of African Americans and to stimulating instruction for a diverse community of thinkers. In addition, the Institute serves as a cultural repository and resource for the citizenry of Georgia.

The Institute offers a certificate upon completion of four courses offered by the Institute, plus an additional two courses approved by the Institute's Director. For further information, contact the Director of the Institute for African American Studies.

Atmospheric Sciences

Contact Person
Thomas L. Mote
tmote@uga.edu
(706) 542-2856

Department
Geography
College of Arts and Sciences
www.uga.edu/atsc

Description of the Program

The undergraduate Certificate Program in Atmospheric Sciences is designed for students who wish to supplement their majors with an in-depth understanding of the atmosphere. This program is open to any undergraduate or post-baccalaureate student meeting the entrance requirements outlined below. (Post-baccalaureate students are college graduates taking additional undergraduate courses, but not for a UGA undergraduate degree. Contact the admissions office for post-baccalaureate admission requirements.) Common majors for atmospheric sciences students include, but are not limited to, agricultural engineering, biological engineering, computer science, crop science, environmental health, environmental soil science, forest environmental resources, geography, marine sciences, mathematics, physics, physics and astronomy, statistics, and telecommunications.

The certificate requires 21 semester hours of upper-level atmospheric sciences or related courses. Students choose either an operational meteorology track or a general atmospheric sciences track. Both tracks require a core of 15 semester hours. The remaining six hours are selected from the approved list of courses with the approval of the student's atmospheric sciences advisor.

The operational meteorology track meets the educational requirements for employment as a meteorologist by the National Weather Service, other civil service agencies, and many companies. The operational meteorology track also meets the recommended curriculum standards set by the American Meteorological Society and is the recommended track for students interested in weather forecasting, broadcast meteorology, or related fields.

The general atmospheric sciences track is designed for students wishing an in-depth understanding of the atmosphere tailored to personal interests and career ambitions.

Both tracks provide students with a strong foundation in the atmospheric sciences necessary for graduate study in meteorology, climatology, or related fields.

The Certificate Program in Atmospheric Sciences is sponsored by the Departments of Biological and Agricultural Engineering, Crop and Soil Sciences, Environmental Health Science, Geography, Marine Sciences, Physics and Astronomy, Statistics, and the School of Forest Resources.

Career Opportunities

Graduates of UGA's Atmospheric Sciences Program are more broadly educated than many graduates of traditional atmospheric sciences programs, thus providing greater career choices. Students selecting either track will find many carrier opportunities. Many companies are hiring atmospheric scientists with diverse backgrounds to assist in their operations. A few examples include the aviation industry, commodity groups, commodity traders, electric and natural gas utilities, engineering firms, food processing companies, and transportation companies. Other areas of employment growth are meteorological, environmental, and agricultural consulting companies.

Program Requirements

The undergraduate Certificate in Atmospheric Sciences requires 21 semester hours of upper level (3000/4000) courses in atmospheric or related sciences. A student must choose either the operational meteorology track or the general atmospheric sciences track. A student must earn a grade of C or better in all certificate courses. A minimum certificate grade point average (GPA) of 2.5 is required in order to earn the certificate. The certificate is awarded only in conjunction with the completion of baccalaureate requirements at UGA. This stipulation is waived for post-baccalaureate students.

Computer Systems Engineering

Contact Persons:
Dr. Tim Foutz
tfoutz@engr.uga.edu
Coordinator of Undergraduate Engineering Programs
Biological and Agricultural Engineering Department
(706) 542-0868

Dr. Dan Everett
dme@cs.uga.edu
Assistant to Department Head
Computer Science Department
(706) 542-2749

Description of the Program

The undergraduate Certificate Program in Computer Systems Engineering is designed to give undergraduates the opportunity to document their educational achievement at the interface of engineering and computer science. The program will be open to all UGA undergraduate students but will be of special interest to students who wish to combine both a theoretical and practical understanding of computer science and engineering systems.

Computer Systems Engineering involves the design and implementation of computer hardware and software systems to solve problems. The understanding of both software and hardware allows the computer systems engineer to view the design and development of hardware and software as two intimately linked parts of one activity. Advances in semiconductor technology have led to a decrease in chip size while increasing processor speeds. As a consequence, microcomputers are embedded into products such as automobiles, home appliances and industrial controls. The growth in computer-related technologies has led to a need in industry for professionals who have a knowledge of basic electrical engineering concepts of circuits, electronics and digital systems and a foundation in computer science.

The Computer Systems Engineering certificate program is interdisciplinary and emphasizes the use of computers to automate, monitor and control various systems. The graduate with the Computer Systems Engineering certificate will be able to interface existing electronic and microprocessor based components to solve a problem. These graduates must be knowledgeable in computer hardware and software and be able to work in a team environment. They must be able to communicate and function across the disciplines of electrical engineering, computer engineering, and computer science.

Educational Goal

The goal of the program is to develop undergraduate scholars with a theoretical and practical understanding of computer science and engineering systems.

Students successfully completing the requirements for this certificate are expected to have:

- a fundamental understanding of computer science and engineering systems,
- the necessary knowledge and skills to pursue graduate work or employment in computer systems engineering,
- the background to use microelectronics, microprocessors, and software to solve problems in engineering systems,
- the knowledge and motivation to continue lifelong learning in engineering and computer science.

Program Requirements

The undergraduate certificate program in Computer Systems Engineering requires at least 18 semester hours of course work in engineering and computer science. The requirements include at least 15 hours in engineering and computer science electives and a 3-hour computer systems engineering design course. The 15 hours of engineering and computer science electives must be outside the student's major department and be approved by the student's CSE undergraduate advisor. Design is the heart of the practice of engineering and is what separates it from its sister disciplines. It is the engineering design component that unites engineering and computer science into computer systems engineering. With a large number of electives available, the student may tailor the program to meet his or her needs. Thus the program will likely be attractive to students with a variety of interests.

The UGA certificate program in Computer Systems Engineering requires a firm foundation in the fundamentals in engineering science and computer science. The program also requires a computer systems engineering design experience. A student must have a minimum grade of "C" in all certificate program coursework and must also have an overall UGA GPA of 2.5 or higher. The certificate is only awarded in conjunction with a UGA undergraduate degree.

Computing

Contact Person
Daniel M. Everett
dme@cs.uga.edu
(706) 542-2749

Department
Computer Science
College of Arts and Sciences

Description of the Program

The Certificate in Computing is designed for students who want a strong set of computing skills to increase their productivity in the workplace. Some holders of the Certificate will become "power users," that is, workers who are unusually proficient at using the power of ordinary office computer systems to produce results in the enterprise. Other Certificate holders may obtain positions as entry-level computer programmers or Web developers.

Eligibility for the Computing Certificate Program

This program is open to undergraduate and post-baccalaureate students in any major except Computer Science. There are no prerequisite courses to enter the program, but students must complete MATH 1113 or equivalent before taking CSCI 1301-1301L , one of the required courses for the Certificate.

Requirements of the Program

The following four courses are required:

CSCI 1100-1100L: Introduction to Personal Computing, 3 hours (a more advanced course can be substituted for CSCI 1100-1100L).
CSCI 1301-1301L: Introduction to Computing and Programming, 4 hours
CSCI 1302: Software development, 4 hours
CSCI(MATH) 2610: Discrete Mathematics for Computer Science, 4 hours

In addition, students must take one of the following elective courses:

CSCI 2670: Introduction to Theory of Computing, 4 hours
CSCI 2720: Data Structures, 4 hours
CSCI(ARTI) 4540: Symbolic Programming, 3 hours
CSCI(PHIL) 4550: Artificial Intelligence, 3 hours
ENGR 4360: Advanced Topics in CAD/CAM, 3 hours
ENGR 4540: Applied Machine Vision, 3 hours
GEOG 4370-4370L: Introduction to Geographic Information Systems, 3 hours
GEOG 4470-4470L: Geographic Analysis and Geographic Information Systems, 3 hours
LING(ENGL) 3150: Generative Syntax, 3 hours

PHIL(EETH) 4250: Technology and Values, 3 hours
PHIL(LING) 4510: Deductive Systems, 3 hours
PHIL(LING) 4520: Model Systems, 3 hours

Each course must be passed with a C or better. A total of 18 or 19 hours will be needed.

Engineering Physics

Contact Persons:
Dr. Tim Foutz
tfoutz@engr.uga.edu
Coordinator of Undergraduate Engineering Programs
Biological and Agricultural Engineering Department
(706) 542-0868

Dr. Alan Edwards
aedwards@hal.physast.uga.edu
Coordinator of Undergraduate Physics
Physics and Astronomy Department
(706) 542-2891

Description of the Program

The undergraduate Certificate Program in Engineering Physics is designed to give undergraduates the opportunity to document their educational achievement at the interface of engineering and physics. The program is open to all UGA undergraduate students but will be of special interest to students who wish to combine both a theoretical and practical understanding of the physical sciences and engineering systems.

Design is the heart of the practice of engineering and the engineering design component unites engineering and physics into engineering physics. With a large number of electives available, the student may tailor the program to meet his or her needs. Thus the program appeals to students from a variety of backgrounds.

Educational Goal

The educational goal of the program is to develop undergraduate scholars with a theoretical and practical understanding of physics and engineering systems.

Students successfully completing the requirements for this certificate are expected to have:

- a fundamental understanding of physics and engineering systems,
- the necessary knowledge and skills to pursue graduate work or employment in engineering physics,
- the necessary background to continue lifelong learning in engineering and physics.

Career Opportunities

An engineering physicist designs, develops and supervises the construction of new equipment, applying the knowledge of engineering and physics to develop new engineering methods and principles. The engineering physicist completes the link between the pure scientist and the engineer by being able to understand the theory of science and to relate it to the practical problems of engineering.

The certificate program graduates should be competitive in the job market because of their broad background. In particular, these graduates should be very attractive in the rapidly growing high-tech industries in Georgia. They will have both the theoretical and practical background for these dynamic industries.

Program Requirements

The certificate requires 18 semester hours of course work in engineering and/or physics. The requirements include 15 hours in engineering and/or physics electives and a 3-hour engineering physics design course. The 15 hours of engineering and/or physics electives must be outside the student's major department and be approved by the student's engineering physics undergraduate advisor and the engineering physics co-directors. The certificate is only awarded in conjunction with a UGA undergraduate degree.

The UGA certificate program in Engineering Physics requires a firm foundation in the fundamentals in engineering science and computer science. The program also requires a computer systems engineering design experience. A student must have a minimum grade of "C" in all certificate program coursework and must also have an overall UGA GPA of 2.5 or higher. The certificate is only awarded in conjunction with a UGA undergraduate degree.

Environmental Ethics

Contact Person
Sandra Crismon
Environmental Ethics Certificate Program
School of Marine Programs
eecp@arches.uga.edu
(706) 542-0935

Description of the Program

The Environmental Ethics Certificate Program trains students to make decisions about environmental problems that involve competing values. Students benefit from viewing environmental issues from an interdisciplinary perspective. The undergraduate program, established in 1994, parallels the graduate program which began in 1983 and complements the University's environmental literacy requirement. The certificate program was the first of its type in the United States.

The certificate is awarded to undergraduate students who successfully complete at least 18 hours of undergraduate course work, including at least 7 credit hours in core courses (one 3- or 4-hour course in ecology, one 3-hour course in ethics, and one 1-hour course in environmental ethics seminar), 7 or 8 hours in approved elective courses, and 3 hours for an approved research paper in environmental ethics.

To be eligible for admission to the program, an undergraduate student must have completed at least three quarters or two semesters of full-time enrollment (must be a rising sophomore). For further information, contact the EECP office, 542-0935, eecp@arches.uga.edu, or contact the coordinator, Peter G. Hartel, Department of Crop and Soil Sciences, 542-0898, pghartel@arches.uga.edu.

Geographic Information Science

Contact Person
Dr. E. Lynn Usery
(706) 542-2346

Department
Geography
College of Arts and Sciences

Description of the Program

The Geographic Information Science Certificate Program is designed to prepare undergraduates with the basic training necessary to enter the rapidly expanding field of geographic information science (GIS). There are three components to the curriculum: a set of prerequisite courses necessary to gain entry to the program, a set of core courses required of all students enrolled in the certificate program, and a set of elective courses that permit exploration of more advanced themes in GIS and/or development of individual research projects or internships in GIS. The certificate program consists of 15-16 credit hours divided into 9 core hours and 6-7 elective hours, following 8-12 prerequisite hours.

Special Requirements

Students must maintain a 3.0 GPA in the five core and elective courses that constitute the certificate program. Certificates will be awarded only in conjunction with completion of baccalaureate requirements in one of the academic units at UGA. This stipulation is waived for post-baccalaureate students.

German Studies

Contact Person
Dr. Paul Popov
Coordinator, German Studies Program

Department
Germanic and Slavic Languages
College of Arts an d Sciences

Description of the Program

The German Studies Program, established in 1979, offers the student a thorough and systematic study of German which will augment his or her particular discipline or major. The study of foreign languages, German in particular, is becoming increasingly important and greatly enhances the student's possibilities for entering and advancing in a broad variety of careers and occupations.

The student may earn the German Language Certificate and/or the Certificate in German Studies in conjunction with his or her work for the Bachelor's Degree. The former emphasizes the study of the language with primary emphasis on conversation, composition, stylistics and techniques of translation. The latter program is interdisciplinary and is designed to integrate the study of German with other disciplines such as art, economics, geography, history, music, philosophy, political science, etc.

Interested students are urged to apply and be admitted to the program of their choice before the end of their sophomore year. Further information may be obtained from the coordinator of the German Studies Program.

Global Studies

Contact Person
Dr. Markus M.L. Crepaz
Program Coordinator
mcrepaz@arches.uga.edu
(706) 542-2947

Department
College of Arts and Sciences

Description of the Program

The Certificate in Global Studies is designed to offer a global perspective, to facilitate the ability to communicate in different languages, to help develop an appreciation for other cultures, and to promote informed analysis of global issues. The certificate serves both educational and vocational purposes through the advancement of an understanding of global affairs and other cultures and preparation for a growing number of international careers in government, business, and non-governmental organizations.

Career Opportunities

Employment opportunities exist in international organizations (government and non-government), multinational civic and economic organizations, and nonprofit humanitarian institutions.

International Agriculture

Contact Person
Edward T. Kanemasu
Regents Professor and Coordinator
Office of International Agriculture
ekanema@arches.uga.edu
(706) 542-7803

College
College of Agricultural and Environmental Sciences

Description of the program

Undergraduate students in Agricultural and Environmental Sciences may focus their degree programs on the special problems of international agriculture and trade relationships. The Certificate in International Agriculture is designed to add a global dimension to all programs in the College.

To obtain a Certificate in International Agriculture, students include courses in foreign language, geography, economic development, and international marketing. Careful planning will allow most students to qualify for the Certificate in International Agriculture by taking these courses as general electives while meeting degree requirements. Admission to the program and further information may be obtained from the Office of Academic Affairs, 102 Conner Hall.

Entrance Requirements

Student must major in an area within the College of Agricultural and Environmental Sciences.

Career Opportunities

Employment opportunities exist in international agribusiness, government service, international scientific companies, import/export companies, freight forwarders, international marketing firms, teaching abroad/teaching foreign students, nongovernmental organizations (NGOs), and multinational companies

Latin American Studies

Contact Persons
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CLACS Director and Graham Perdue Professor of Anthropology
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(706) 542-1452

Fausto O. Sarmiento
CLACS Program Coordinator
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(706) 542-9079

Department
Center for Latin American and Caribbean Studies
College of Arts and Sciences

Description of the Program

The Latin American Studies Program was established to coordinate and develop facilities at the University to provide interdisciplinary preparation for students who are planning careers that require specialized knowledge of the Latin American republics and the Inter-American system.

Career Opportunities

Students who earn a Certificate in Latin American Studies enhance their opportunities to work in international business and finance, consulting, international development, technology cooperation and in overseas positions with American companies in Latin America and the Caribbean. Besides their formal major, the certificate entitles the prospective UGA graduate recognition of his/her mastery of the language and culture of the region and facilitates more connections at the local level. Graduates have found employment in corporations such as Coca-Cola, AT&T, and BellSouth; in organizations such as CARE, the Peace Corps, the Nature Conservancy; and in colleges teaching Spanish or Portuguese.

Entrance Requirements

Open to students who have completed 30 hours with grade C or better, with demonstrable knowledge of a language of the region (Spanish, Portuguese, French, Tzotzil, Tzetzal, Quichua, Guarani, Aymara, etc.), and willingness to further Latin Americanism on campus.

Applications for admission to the program and further information may be obtained from the CLACS Program Coordinator.

Leadership and Service

Contact Person
Dr. Christine Langone, Professor
Program Coordinator
112 Four Towers
(706) 542-0715
clangone@arches.uga.edu

Department
Agricultural Leadership, Education & Communication
College of Agricultural and Environmental Sciences

Description of the Program

The Certificate in Leadership and Service is designed to enhance the leadership skills and orientation to service of students through an interdisciplinary approach to the study and practice of leadership. Students will gain experience in leadership in personal, team, organizational and community contexts. Courses to complete the certificate will provide students with the opportunity to work in groups, develop skills in communication and critical thinking, practice skills in decision making and problem solving, and serve in leadership roles in their college, campus organizations or community.

Requirements for the certificate are 18 hours of course work. The curriculum includes four major components: 1) a required foundation course taught from an interdisciplinary perspective; 2) minimum of 12 hours of electives which support the conceptual foundations of leadership and service including psychology, sociology, management, advanced leadership, communication, and political science courses; 3) discipline-based courses which incorporate significant service or leadership components; and 4) three hours of directed project or internship in which students apply leadership and service skills under the direction of a faculty advisor. The certificate allows students maximum flexibility in designing a plan of work to target their particular interests and developmental needs.

The program is a collaborative effort among multiple colleges and campus units including the College of Agricultural and Environmental Sciences, the College of Family and Consumer Sciences, the Warnell School of Forest Resources, the College of Education, Student Affairs, and other units who are working to incorporate leadership and service components in their courses.

Entrance Requirements

The Certificate in Leadership and Service is open to any University of Georgia student. To be eligible for admission to the program, a student must be rising sophomore in good academic standing. Applications may be obtained from the Program Coordinator.

Medieval Studies

Contact Person
Dr. Jonathan Evans
Director, Medieval Studies Program
jdmevans@arches.uga.edu
(706) 542-2229; 542-1261

Department
English
College of Arts and Sciences

Description of the Program

Regardless of their major, students of the medieval period have discovered that an interdisciplinary approach is necessary to achieve understanding and expertise in their area of study. Established in 1974, The University of Georgia Medieval Studies Program is the only program of its kind in the state and the earliest-established certificate program supported by the University of Georgia. Through the UGA Medieval Studies Program, undergraduate students can establish an interdisciplinary concentration leading to the Certificate in Medieval Studies while completing their degree in one of the established departments.

The individual student program is developed in consultation with the student's major professor and approved by the Steering Committee of the Medieval Studies Program. Upon completion of the approved plan of study, the A.B. candidate is awarded the Certificate in Medieval Studies with the baccalaureate diploma.

For specific requirements, contact the coordinator of the Medieval Studies Program.

New Media

Contact Person
Dr. Scott Shamp
Director, New Media Institute
sshamp@uga.edu
(706) 227-7237

Department
New Media Institute

Description of the Program

The New Media Interdisciplinary Certificate Program provides students with theoretical and practical knowledge of developing digital media systems. Students explore the historical, political, social, and economic dimensions of new media technologies. Each student must complete a capstone project. The certificate consists of 17

hours of course work. New Media Institute courses comprise 11 hours of the course work:
NMIX 2020, Introduction to New Media (3 hrs.)
NMIX 3110, New Media Production (3 hrs.)
NMIX 3220, New Media Topics I (1 hr.)
NMIX 3221, New Media Topics II (1 hr.)
NMIX 4510, New Media Capstone (3 hrs.)
In addition, students are required to complete 6 hours of course work from an approved list of new media electives.

Water Resources

Contact Person
Jenny Yearwood
Warnell School of Forest Resources
yearwood@uga.edu
(706) 542-0947

Description of the Program

The Water Resources Certificate Program prepares students for related careers in environmental science and management. Protecting the long-term ecologic health of our rivers and streams is an important national goal. Yet our society has ever-increasing demands for inexpensive supplies of high-quality water. The purpose of the program is to train students to manage our scarce water resources for the maximum benefit of the world's population, while at the same time preserving the ecologic integrity of our aquatic resources.

Career Opportunities

Water Resource careers combine monitoring of environmental systems with sustainable resource management. Employment opportunities are growing. Positions are increasing rapidly with local, state, and federal agencies as well as with private sector and non-governmental organizations. One reward of a water resources career is having the outdoors as your office.

Certificate Requirements

The Water Resources Certificate Program provides a common curriculum to meet the educational needs of the next generation of environmental scientists and managers. Many of the courses provide hands-on experiences in an outdoor setting to learn about water resources.

The Certificate is awarded upon completion of at least one course from each of following categories: Water Resource Foundations; Water Quality Foundations; Hydrologic Processes; Biological Interactions; and Water Resource Applications.

The program combines the expertise of over seventy faculty from twelve academic units, providing excellent opportunities for scientific research and discussion.

Women's Studies

Contact Person
Patricia Miller
Director
Women's Studies Program
(706) 542-2846

Department
Women's Studies Program
College of Arts and Sciences
http://www.uga.edu/wsp

Description of the Program

The Women's Studies Program is an academic program providing an interdisciplinary perspective on women, gender, and sexuality. The program cooperates with departments of all schools and colleges of the University in developing courses that focus on women and in integrating the new scholarship on women into existing courses. Traditional academic disciplines have devoted little systematic attention to gender. In the past 30 years, feminist scholars have contributed to the reinterpretation of existing data and to the presentation of new knowledge about the diversity of women's experiences. Through course work, the Women's Studies Program offers students an opportunity to explore women's roles, contributions, and perspectives, and in doing so, rectifies omissions in the existing curriculum. We communicate with the University community through our listserv (ugawsp-l@listserv.uga.edu) and our web page (*www.uga.edu/wsp*).

The Certificate in Women's Studies is awarded upon completion of 18 semester hours of approved courses. All candidates must include (1) WMST 1110-1110D or 1110H or 2010 or 2010H, *and* (2) WMST 4010 Introduction to Feminist Theories in their programs of study. The 12 hours remaining will be drawn primarily from a list of Primary Course Options, courses devoted exclusively or primarily to topics pertaining to women and gender. For a list of these courses, go to *www.bulletin.uga.edu/bulletin/prg/minors/women's_studies_minor.html.* With special permission, a student may take three hours of WMST 4950 Directed Studies in Women's Studies, *or* three hours of directed studies in a department, *or* three hours of a related course in which there is an opportunity to study women through units offered by the instructor or through term papers.

The program advisor can provide current information on primary and related courses.

Depending upon the student's degree program, Certificate courses may count toward general studies, the major, or elective offerings. A grade of C or better is required in each course. With the exception of WMST courses, no more than 6 semester hours may be taken in the same department (or have the same prefix). No more than 6 semester hours may be taken with the same instructor. Interested students will need to discuss their plans for the Certificate with their own advisors early in their academic careers so that proper sequencing of prerequisites, where required, can be allowed for. Also, they must contact the program advisor to complete an application, to declare a proposed course of study, and to secure information about semester course offerings.

Career Opportunities

A Certificate in Women's Studies complements any academic major and opens career opportunities in fields of law, women's health, education, counseling, public relations, politics, and many others.

Courses of Instruction

Prefix Abbreviations

Courses under prefixes for which no page numbers are indicated are graduate or professional level and therefore do not appear in this Bulletin. For a complete list of all courses offered at the University, see the Bulletin Web site at *www.bulletin.uga.edu.*

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Courses of Instruction

(AAEC) Agricultural and Applied Economics

College of Agricultural and Environmental Sciences, Department of Agricultural and Applied Economics

AAEC 2020-2020L. Introduction to Computers in Agribusiness and Natural Resources. 2 hours. 1 hour lecture and 2 hours lab per week.
Computer technology, and the application of computer technology for the solution of business and economic problems in agriculture and natural resources. Applications will include spreadsheets, word processing, electronic mail, and locating and obtaining information over the Internet.

AAEC 2060. Economic Perspectives on the Environment and Natural Resources. 3 hours.
Not open to students with credit in AAEC 3060 or AAEC 4650 or ECON 2100 or ECON 4150.
An exploration of the relationships between a healthy environment and a healthy economy. Students gain conceptual insight, problem-solving skills, and general knowledge needed to better understand and solve environmental and natural resource issues and problems from an economic perspective that recognizes important linkages between economic, environmental, and ethical systems.

AAEC 2580. Applied Microeconomic Principles. 3 hours.
Not open to students with credit in ECON 2106.
Microeconomic principles such as consumer demand, cost of production and management are utilized to analyze the relative prosperity of the population in Georgia outside of the major urban centers. The impact of international trade, capital availability in the rural economy, environmental policies, as well as the maintenance of a viable rural industry will be important topics in this course.

AAEC 3010. Farm Organization and Management. 3 hours.
Prerequisite: AAEC 2580 or ECON 2106.
The study of individual farm programs for the purpose of determining methods to be used for increasing farm income.

AAEC 3040. Agribusiness Marketing. 3 hours.
Prerequisite: AAEC 2580 or ECON 2106.
Agribusiness marketing for farm products describing and analyzing agribusiness marketing functions to have a comprehensive understanding of the principles of agribusiness marketing.

AAEC 3060. Principles of Resource Economics. 3 hours.
Prerequisite: AAEC 2580 or ECON 2106.
Basic theoretical concepts and analytical tools necessary to evaluate resource use, allocation, and policy. Emphasis is placed upon theoretical applications to natural, rural, and agricultural resources which impact both public sector and private sector economic activities.

AAEC 3100. Food and Fiber Marketing. 3 hours.
Not open to students with credit in MARK 3000.
Prerequisite: AAEC 2580 or ECON 2106.
Basic concepts of marketing food and fiber and related services and for making essential marketing decisions; approaches food and fiber product marketing as being individual and organization activities aimed at facilitating and expediting exchanges within a set of dynamic environmental factors.

AAEC 3200. Selling in Agribusiness. 3 hours.
Sales and merchandising techniques appropriate for agricultural selling and marketing. The psychology of selling, the selling process, spatial marketing strategies, and communication skills are emphasized, as used in agribusiness.

AAEC 3300. Agribusiness Accounting. 3 hours.
Not open to students with credit in ACCT 1160 or ACCT 2101 or AAEC 2110.
Accounting for agribusiness firms with emphasis on financial statement preparation and analysis of accounting information for managerial purposes. Special emphasis is given to problems of income measurement and asset valuation for agribusiness firms.

AAEC 3400. Introduction to Agricultural Policy. 3 hours.
Prerequisite: (AAEC 2580 or ECON 2106) and ECON 2105.
Domestic and international government policies affecting agriculture, agribusinesses, and rural economies. Policy alternatives aimed at solving economic and environmental problems of the food and agricultural sector are identified and evaluated.

AAEC 3510. Agricultural Credit. 3 hours.
Prerequisite: AAEC 2580 or ECON 2106.
The techniques and principles of finance of the farm firm and a study of needs, sources, and problems associated with credit and capital use among individual farm business units.

AAEC 3580-3580L. Intermediate Economic Principles. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in ECON 4010.
Prerequisite: (AAEC 2580 or ECON 2106) and [MATH 2110 or (MATH 2210 and MATH 2210L)].
Competitive and imperfect markets in the allocation of consumer goods and input factors in the free enterprise economy.

AAEC 3610-3610L. Applied Econometrics. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: STAT 2000.
Prerequisite or corequisite: AAEC 3580-3580L.
Basic applied econometric analysis, including simple regression analysis, hypothesis testing, model selection, and data collection techniques. Applications are an integral part of the course, with students using computers to solve problems common in agricultural and environmental sciences.

AAEC 3690. Agribusiness Finance. 3 hours.
Prerequisite: (AAEC 2580 or ECON 2106) and (AAEC 3300 or ACCT 2101).
Financial concepts and analysis related to agribusiness firms, including analysis based on financial statements, business and financial risk, valuation, and capital budgeting.

AAEC 3910. Internships. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Junior standing and permission of department.
Educational experience gained while performing an internship for an agribusiness, governmental, environmental management, or natural resource agency or organization.
Non-traditional format: Internship.

AAEC 3980. Introduction to Agribusiness Management. 3 hours.
Not open to students with credit in AAEC 4980/6980.
Prerequisite: AAEC 2580 or ECON 2106.
Managerial concepts, procedures, and techniques in agribusiness management. Techniques of planning, organization, staffing, directing, and controlling functions of management.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

AAEC 4040-4040L. Quantitative Approaches to Agribusiness Management. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: STAT 2000.
Agribusiness decision making and forecasting using probabilities and simulation.

AAEC 4050. Agribusiness Law. 3 hours.
Legal principles as they apply to agribusiness, directed toward making students aware of rights and obligations of agribusiness firms. The materials should enable students to recognize and avoid legal problems, and effectively utilize legal counsel.

AAEC 4210/6210. Production Economics: Theory with Applications. 3 hours.
Prerequisite: Undergraduate level only: AAEC 3580-3580L.
Fundamental economic principles in determining efficient adjustments in agricultural resource use consistent with economic growth, and changing technology and economic conditions.

AAEC(EHSC) 4250. Environmental and Public Health Law. 3 hours.
Not open to students with credit in AAEC 4930/6930.
Basic legal principles and procedures as they relate to environmental regulations and public health. Coverage of common law, torts, nuisances, regulatory standards, and state and federal environmental laws. Delineation of significant constitutional and federal regulations that affect managerial decisions.

AAEC 4510/6510. Farm Appraisal. 3 hours.
Prerequisite: Undergraduate level only: AAEC 2580 or ECON 2106.
The models of appraisal to farm property, including factors influencing farm land and building values, such as land use, soils, crops, livestock, and buildings.

AAEC 4650. Environmental Economics. 3 hours.
Prerequisite: AAEC 2580 or ECON 2106.
Economic theory and methods applied to environmental problems and policies. Policies affecting individual and business decisions about environmental quality, policy formation, and incentive-based solutions; alternatives for reform evaluated for political and economic acceptability.

AAEC 4710/6710. Rural Economic Development and Growth. 3 hours.
Prerequisite: Undergraduate level only: AAEC 2580 or ECON 2106.
Inputs and outputs between agriculture and agricultural businesses; analysis of factors affecting development and economic growth in developing areas.

AAEC 4760. The Economics of Agricultural Processing and Marketing. 3 hours.
Prerequisite: AAEC 3580-3580L.
The economics of the agricultural processing and marketing sectors. Economics of assembly line production; efficient plant size, location, and operation; the economics of commodity storage; the economics of the marketing sector; spatial competition; and price and quantity competition among firms with market power.

AAEC 4800/6800-4800L/6800L. Water Resource Economics. 3 hours. 3 hours lecture and 1 hour lab per week.
Prerequisite: Undergraduate level only: AAEC 2580 or ECON 2106.
The economic aspects of the use, supply, development, and management of water resources with special emphasis on river basin and project planning, benefit-cost analyses, water demands, and multiple use management of water resources.

Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

AAEC(FINA) 4870/6870. Futures and Option Markets. 3 hours.
Prerequisite: Undergraduate level only: AAEC 2580 or ECON 2106.
Development, functions, and importance of futures and option markets. Futures and option contracts; issues such as speculation, the roles of commission houses, commodity exchanges, and clearinghouses; and the use of future contracts as instruments for financing business activities. Technical and fundamental trading theories.

AAEC 4910/6910. International Agribusiness Marketing and Management. 3 hours.
Undergraduate prerequisite: [((AAEC 2580 or ECON 2106) and (AAEC 3040 or AAEC 3100)) or permission of department] and Junior standing.
Directed field study tour(s), site visits to agribusiness firms, and lectures in agribusiness marketing and management from an international perspective. Language, cultural, and environmental aspects of agricultural production, processing, and international marketing.

AAEC 4930/6930. Environmental Law and Governmental Regulation. 3 hours.
Not open to students with credit in AAEC(EHSC) 4250.
Regulatory theory, externalities and market failures, definition of key regulations affecting agribusiness, overview of local government law, and delineation of environmental laws relating to agriculture. Current environmental issues are related to statutory, administrative, and regulatory authorities.

AAEC 4960. International Agricultural Trade Policy. 3 hours.
Prerequisite: AAEC 3580-3580L or ECON 4010.
Basic international trade theory, its application to agricultural commodity trade, and the effects of international relations and agricultural policy on world trade.

AAEC 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

AAEC 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

AAEC 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional tormat: Directed study.

AAEC 4980/6980. Agribusiness Management. 3 hours.
Prerequisite: Undergraduate level only: (AAEC 3300 or ACCT 2101) and (AAEC 3040 or AAEC 3100).
The basic skills needed to be an effective manager of an agribusiness; applying and integrating these skills into a workable approach to management; provides a step-by-step approach to the application of basic practical management skills in marketing, demand analysis, forecasting, finance, plant operations, and personnel.

AAEC 4990. Special Topics in Agricultural and Applied Economics. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Special problems in agricultural, environmental, or other applied economics analysis, decision making, and policy studies.

AAEC 4990H. Honors Thesis. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual research in the field of his/her major or in a closely related field.
Non-traditional tormat: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

(ACAC) Academic Assistance Counseling

Division of Academic Assistance

ACAC 0097. Academic Reentry Skills. 2-3 hours.
Provides students a better understanding of unique challenges associated with reentry to an academic setting.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAC 0098. Introduction to Academic Assistance. 2-3 hours.
Provides students a better understanding of realistic study goals, academic motivation, time management, and multi-modal information processing. Special attention will be given to delineating the

differences between successful and less successful students.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAC 0099. Academic Skills for Success. 2-3 hours.
Development of personal, social, and career exploration skills which facilitate success and achievement in a university setting.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(ACAE) Academic Assistance English

Division of Academic Assistance

ACAE(ENGL) 0097. Fundamentals of Effective Writing. 3 hours.
Covers major sentence and syntax errors and basic organization of paragraphs and short narrative and expository papers. Writing topics include personal and expository topics. Emphasis on drafting and revising.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAE(ENGL) 0098. Basic Composition for Multilingual Writers. 3 hours.
Not open to students with credit in ACAE(ENGL) 0099.
For multilingual students only. Course covers elements of effective style, careful proofreading, logical organization, and convincing development of expository and persuasive essays. Emphasis on problems multilingual students typically experience with proofreading, revision, and writing for an American academic audience.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAE(ENGL) 0099. Basic Written Composition. 3 hours.
Not open to students with credit in ACAE(ENGL) 0098.
Covers elements of effective style, careful proofreading, logical organization, and convincing development of college-length expository and persuasive essays. Emphasis on proofreading, revision, and analytic and interpretive thinking and writing.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAE(ENGL) 0099L. Developmental Studies English Laboratory. 1 hour. 1 hour lab per week.
Classroom and individualized instruction to prepare students for the English Collegiate Placement Exam and Exit Writing Sample; both are required criteria for Basic Written Composition.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(ACAM) Academic Assistance Math

Division of Academic Assistance

ACAM(MATH) 0097. Intermediate Algebra I. 3 hours.
Concepts of fractions, decimals, percents, and signed numbers. Methods for solving first degree equations, systems, and related applications, and graphing linear equations.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAM(MATH) 0098. Intermediate Algebra II. 3 hours.
Concepts of factoring, functions, polynomials. Methods for solving second degree and rational equations and related applications. Operations regarding polynomials, exponents, and radicals.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAM(MATH) 0099. Introduction to College Algebra. 3 hours.
Concepts of factoring, exponents, polynomials, radicals, fractions, and graphing. Methods for solving equations: rational, first and second degree, absolute value, inequalities, and systems and their related applications.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(ACAR) Academic Assistance Reading

Division of Academic Assistance

ACAR(READ) 0097. Academic Assistance Reading. 3 hours.
College reading and vocabulary skills.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAR(READ) 0098. Developing Reading and Studying Fluency. 4 hours.
Critical reading and thinking skills, reading fluency, and vocabulary development.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAR(READ) 0099. Reading and Studying in College. 3 hours.
Study strategies needed to be successful in college using content from a variety of disciplines, includes

reading rate and vocabulary development.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

ACAR(READ) 0099L. Preparation for the Collegiate Placement Exam (CPE). 1 hour. 1 hour lab per week.
Computer instruction on reading rate and test preparation for Collegiate Placement Exam (CPE).
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(ACCT) Accounting

Terry College of Business

ACCT 1160. Survey of Accounting. 3 hours.
Prerequisite: Permission of department.
The analysis and interpretation of financial statements commonly found in the private sector. Not open to Business Administration students.

ACCT 2101. Principles of Accounting I. 3 hours.
Not open to students with credit in ACCT 1120H.
Basic accounting systems, concepts, and principles. The analysis and design of financial controls and the preparation, analysis, and interpretation of financial statements. Time value of money and ratio analysis are discussed as they relate to other disciplines such as finance and marketing.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ACCT 2101H. Principles of Accounting I (Honors). 3 hours.
Not open to students with credit in ACCT 1120H or ACCT 2101.
Prerequisite: Permission of Honors.
Financial accounting and the accounting environment. Students learn to record business transactions, post accounts, and prepare financial statements. The latitude given managers in preparing financial statements, and the role played by the external auditor in attesting statement presentations. A research project is required.

ACCT 2102. Principles of Accounting II. 3 hours.
Not open to students with credit in ACCT 1130H.
Prerequisite: ACCT 2101H or ACCT 2101.
Basic managerial accounting systems, concepts, and principles. The analysis, interpretation, and reporting of cost data for management's decision making needs. Cost-volume-profit analysis, budgeting, and performance reporting are discussed as they relate to other business disciplines.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ACCT 2102H. Principles of Accounting II (Honors). 3 hours.
Not open to students with credit in ACCT 1130H or ACCT 2102.
Prerequisite or corequisite: ACCT 2101 or ACCT 2101H or permission of Honors.
The analysis, interpretation, and reporting of managerial accounting information for management's use in operating a business. Concepts and methods, such as capital budgeting and break-even analysis, are related to other business disciplines.

ACCT 4000. Accounting Information in a Multinational Setting. 3 hours.
Prerequisite: ACCT 2102H or ACCT 2102.
The use of domestic and international accounting information in the valuation of business enterprises and prediction of earnings, cash flow, and equity value.

ACCT 4050. Financial Statement Analysis for Non-Accounting Majors. 3 hours.
Prerequisite: ACCT 2102.
Designed for non-accounting majors, this course provides a user's perspective of financial statements. Financial analysis and critical thinking skills as applied to financial accounting data.

ACCT 4400. Principles of Taxation for Non-Accountants. 3 hours.
Not open to students with credit in ACCT 5400/7400.
Prerequisite: ACCT 2101.
The principles of federal income taxation as they apply to individuals and business entities.

ACCT 4990. Directed Study in Accounting. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ACCT 2102H or ACCT 2102.
Directed study or research in the area of accounting.
Non-traditional format: Directed readings or study under the direction of a faculty member done independently of regularly scheduled classes.

ACCT 4990H. Honors Thesis. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual research leading to an honors thesis under the guidance of a thesis director.
Non-traditional format: Research project under the direction of a faculty member done independently of the regularly scheduled classes.

ACCT 5000. Intermediate Accounting I. 3 hours.
Prerequisite: ACCT 2102 or ACCT 2102H.
Accounting concepts, critical thinking skills, and techniques involved in the accounting process and the preparation of financial statements. Emphasis is on accounting for most assets. Financial statements from the perspective of both preparers and

users, accounting standard-setting process, and economic consequences of accounting standards on a firm's stakeholders.

ACCT 5010. Intermediate Accounting II. 3 hours.
Prerequisite: ACCT 5000.
A continuation of Intermediate Accounting I. New topics include accounting for intangible assets, current and long-term liabilities, stockholders' equity, earnings per share, and investments.

ACCT 5020. Intermediate Accounting III. 3 hours.
Prerequisite: ACCT 5010.
A continuation of Intermediate Accounting II. New topics include revenue recognition, accounting changes and errors, income taxes, pensions, and leases.

ACCT 5030/7030. Advanced Financial Accounting. 3 hours.
Application of accounting theory to complex business entities, including accounting for equity investments, business combinations, and international operations. Accounting for not-for-profit organizations. The preparation of consolidated financial statements, including the use of electronic spreadsheets.

ACCT 5100/7100. Managerial Accounting I. 3 hours.
Prerequisite: ACCT 2102H or ACCT 2102.
The design of accounting systems to serve the internal needs of management with an emphasis on underlying theory. Product costing, including activity-based costing; budgeting and other planning applications, information for decision making, planning and control application for decentralized organizations.

ACCT 5200/7200. Auditing, Risk Assessment, and Control. 3 hours.
Prerequisite: ACCT 5010.
Prerequisite or corequisite: ACCT 5310/7310.
Assurance services with focus on the audit of financial statements. The basic financial statement audit process is discussed including the concepts of evidence, materiality, and risk. The role of professional ethics and legal liability in the auditing profession.

ACCT 5310/7310. Systems I. 3 hours.
Prerequisite: ACCT 2102H or ACCT 2102.
Accounting information systems (AIS), including the role of such systems in an organization, electronic data processing, AIS applications, AIS analysis and design, AIS controls, and the audit of AIS.

ACCT 5400/7400. Taxation I. 3 hours.
Prerequisite: ACCT 2102H or ACCT 2102.
A basic federal income tax course covering concepts of taxation applicable to all taxable entities but primarily relating to individuals. Introduces research approaches to tax problems as well as methods of analysis most appropriate to taxation issues.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ACCT 5400H. Taxation I (Honors). 3 hours.
Not open to students with credit in ACCT 5400/7400.
Prerequisite: ACCT 2102 and permission of Honors.
A basic federal income tax course covering concepts of taxation applicable to all taxable entities but primarily relating to individuals. Introduces research approaches to tax problems as well as methods of analysis more appropriate to taxation issues.

ACCT 5410/7410. Taxation II. 3 hours.
Prerequisite: ACCT 5400/7400.
The federal taxation of business entities and owners, primarily focusing on corporations and shareholders. The tax provisions governing business entities, as well as the impact of those provisions on business decisions and choice of entity form.

ACCT 5710. Professional Accounting I. 1.5 hours.
Prerequisite: ACCT 2102 or ACCT 2102H.
Areas of accounting emphasis and their pertinence to alternative accounting careers. Written assignments and discussion with speakers used to enhance communication skills.

ACCT 5720. Professional Accounting II. 1.5 hours.
A continuation of Professional Accounting I with increased emphasis on application of business technology.

ACCT 5800/7800. Internship/Cooperative Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Applied professional experience or experience with the profession in another culture.
Non-traditional format: Relevant professional work experience that augments topics covered in regular classes.

(ADPR) Advertising and Public Relations

College of Journalism and Mass Communication, Department of Advertising and Public Relations.

ADPR 3100. Principles of Advertising. 3 hours.
Advertising concepts, organization, and practices. Topics include advertising preparation and placement, research, and advertising's economic and social impact.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ADPR 3110. Advertising Message Strategy. 3 hours.
Prerequisite: (ADPR 3100 or MARK 3000) and permission of major.
Strategy and execution of advertising copy and layout. Study of solutions of advertising/marketing communication problems through preparation of advertisements for a variety of media.

ADPR 3120. Media Planning. 3 hours.
Prerequisite: ADPR 3100 and [(STAT 2000 or STAT 2210 or STAT 4210) or (MSIT 3000] and permission of major.
Media planning and its role within the marketing function. Attention is directed toward the creative selection, scheduling, and evaluation of media vehicles to deliver advertising and promotion messages to target audiences in an effective and efficient manner.

ADPR 3130. Advertising and Consumer Research. 3 hours.
Prerequisite: ADPR 3100 and [(STAT 2000 or STAT 2210 or STAT 4210) or (MSIT 3000] and permission of major.
Advertising and consumer research techniques in strategic planning, message development, understanding consumer behavior, measurement of media audiences, and evaluation of advertising efforts and spending. Emphasis on theories of advertising response, consumer behavior, objective setting, and measurement of advertising effects.

ADPR 3140. Advertising and Society. 3 hours.
Prerequisite: ADPR 3100 and permission of major.
Designed to foster a critical understanding of advertising and promotion as an institution, and its role in communication, society, culture, and our economy. Students develop a framework in which to understand the continuing dialogue between supporters and critics, and confront issues related to the institution's ethical conduct, regulatory issues, and social responsibility.

ADPR 3510. Public Relations Research. 3 hours.
Prerequisite: ADPR 3850 and (STAT 2000 or STAT 2210 or MSIT 3000).
Design, strategy, and implementation of public relations research techniques. Study of research theory, methods, and practices within the context of public relations case studies and client work.

ADPR 3520. Graphic Communications. 3 hours.
Prerequisite: Permission of major.
Printing processes, typography, photoengraving, layout and design, production planning, and related topics.

ADPR 3850. Public Relations. 3 hours.
Principles and techniques of public relations. Research in interpersonal and mass communications with emphasis on effectiveness and studies among various publics.

ADPR 4960H. Honors Undergraduate Research. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual project in advertising, public relations, and related communication fields under the direction of a sponsoring faculty member.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

ADPR 4970H. Honors Undergraduate Research. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual project in advertising, public relations, and related communication fields under the direction of a sponsoring faculty member.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

ADPR 4980H. Honors Undergraduate Research. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual project in advertising, public relations, and related communication fields under the direction of a sponsoring faculty member.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

ADPR 4990H. Honors Undergraduate Thesis . 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual research in advertising, public relations, and related communication fields under the direction of a sponsoring faculty member.

Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

ADPR 5010. Advertising Internship. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: ADPR 3110 and ADPR 3120 and permission of department.
Supervised experience in advertising. Interns are required to work full time for sponsoring organizations and to complete a journal describing weekly assignments with examples of completed work. Performance is evaluated by representatives of the internship sponsor and by the assigned faculty supervisor.
Non-traditional format: Internship.

ADPR 5011. Public Relations Internship. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: ADPR 5910 and permission of department.
Supervised experience in public relations. Interns are required to work full time for sponsoring organizations and to complete a journal describing weekly assignments with examples of completed work. Performance is evaluated by representatives of the internship sponsor and by the assigned faculty supervisor.
Non-traditional format: Internship.

ADPR 5170. Advanced Studies in Advertising and Public Relations. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Independent study of any area of advertising, public relations, or related communications function. Students are responsible for finding a faculty sponsor. Written proposal outlining the area of study must be submitted and receive approval from the sponsoring instructor.
Non-traditional format: Independent study.

ADPR 5710. Advertising and Communication Management. 3 hours.
Prerequisite: ADPR 3110 and ADPR 3120 and ADPR 3130 and permission of major.
Managerial and decision making processes of advertising and related marketing communication functions. Emphasis on determining opportunities, integrating with other elements of the promotion mix, setting objectives, establishing budgets, and measuring advertising and communication effectiveness.

ADPR 5740/7740. Advertising and Communication Campaigns. 3 hours.
Prerequisite: ADPR 3110 and ADPR 3120 and ADPR 3130 and permission of major.
Corequisite: ADPR 5710.
Managerial and decision making processes in simuated situations with student groups functioning as advertising agencies to plan, implement, and manage advertising and communication campaigns for assigned clients.

ADPR 5760. Direct and Interactive Advertising and Communications. 3 hours.
Prerequisite: ADPR 3110 and ADPR 3120 and ADPR 3130 and permission of major.
Direct mail, direct response advertising, sales promotion, and interactive communication technologies. Attention is given to evaluating direct and interactive advertising and promotion strategies, the role and uses of new communication technologies, audience targeting, message design and creation, specialized media and message-delivery methods, and consumer databases.

ADPR 5790/7790. Advertising Portfolio Seminar. 3 hours.
Prerequisite: ADPR 3110 and permission of major.
Student production and development of an advertising portfolio of their best creative work with emphasis on both verbal and visual skills.

ADPR 5910. Public Relations Administration. 3 hours.
Prerequisite: ADPR 3850 and JOUR 3410 and permission of major.
Operation and objectives of corporate public relations programs using the case study approach. Emphasis is given to relating the management function of decision making and policy formation to the communication process.

ADPR 5920. Public Relations Communications. 3 hours.
Prerequisite: ADPR 3850 and JOUR 3410 and permission of major.
Writing course designed to help the student understand news releases, feature stories, speeches, letters, scripts, cutlines, memoranda, and other tools basic to the practice of public relations. Emphasis will be placed on the strategies and techniques behind public relations writing.

ADPR 5950/7950. Public Relations Campaigns. 3 hours.
Prerequisite: ADPR 5910 and ADPR 5920 and permission of major.
Research, planning, and preparation of an integrated public relations campaign. Campaigns will alternate among business, governmental, and organization problems.

ADPR 5990. Seminar in Advertising and Public Relations. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: (Junior standing or senior standing) and permission of department.
Seminar designed to synthesize and integrate many of the theoretical and practical approaches to the

study and application of advertising, public relations, and related communication fields. Emphasis is on critical thinking, analytical processes, and acquisition of specialized knowledge pertaining to the seminar topic.

(ADSC) Animal and Dairy Science

College of Agricultural and Environmental Sciences, Department of Animal and Dairy Science

ADSC 2000-2000L. Practicum in Animal and Dairy Science. 2 hours. 1 hour lecture and 3 hours lab per week.
Care and techniques of farm animal management, handling, movement, restraint, and facilities needed for efficient and profitable animal production.

ADSC 2010. Introductory Animal and Dairy Science. 3 hours.
Corequisite: ADSC 2010L.
Basic principles of breeding, feeding, and management of beef cattle, dairy cattle, sheep, swine, and horses.

ADSC 2010L. Introductory Animal and Dairy Science Laboratory. 1 hour. 3 hours lab per week.
Corequisite: ADSC 2010.
Basic principles of breeding, feeding, and management of beef cattle, dairy cattle, sheep, swine, and horses.

ADSC 2300. Companion Animal Care. 2 hours.
Companion animal care with emphasis on nutrient requirements, digestion and absorption, commercial feeds, reproduction, diseases, parasites, behavior, and the animal role in human health and disease.

ADSC 2630-2630L. Pleasure Horse Management. 2 hours. 1 hour lecture and 2 hours lab per week.
Pleasure horse management, including conformation, breeds, nutrition, reproduction, diseases, behavior, and current issues of the equine industry.

ADSC 3010-3010L. Meat Merchandising. 2 hours. 1 hour lecture and 3 hours lab per week.
The conversion of domestic livestock to retail and food service products. Emphasis on slaughter, fabrication, pricing, packaging, and sanitation technologies.

ADSC 3110. Introduction to Genetics of Livestock Improvement. 3 hours.
Prerequisite: ADSC 2010 and ADSC 2010L and BIOL 1107-1107L.
Genetics and statistics as related to the genetic improvement of farm animals.

ADSC 3180-3180L. Meats Judging I. 2 hours. 4 hours lab per week.
Grading and evaluating beef, pork, and lamb carcasses and their wholesale cuts. Terminology to describe and detect differences among carcasses of the same species. Written reasons describing detectable differences.

ADSC 3190-3190L. Meats Judging II. 2 hours. 4 hours lab per week.
Prerequisite: ADSC 3180-3180L or permission of department.
Selecting and grading carcasses and wholesale cuts of beef, pork, and lamb. Terminology required to describe and detect differences among carcasses and primal cuts in addition to written reasons describing detectable differences. The meats judging team which represents the University in intercollegiate Meats Judging Contests will be selected from the students in this course.

ADSC 3200-3200L. Evaluation and Composition. 3 hours. 1 hour lecture and 4 hours lab per week.
Evaluation of livestock and their carcasses for composition and selection criteria for the breeding herd. Emphasis will be on development of value-determining traits and how they can be controlled to influence livestock value.

ADSC 3210-3210L. Livestock Evaluation and Selection. 2 hours. 4 hours lab per week.
The selection of livestock for the breeding herd and for slaughter. The team representing the University in the annual Spring Intercollegiate Livestock Judging Contests will be chosen from the students in this course.

ADSC 3220-3220L. Advanced Livestock Evaluation and Selection. 2 hours. 4 hours lab per week.
Prerequisite: ADSC 3210-3210L or permission of department.
A continuation of Livestock Evaluation and Selection. The team representing the University in the annual Fall Intercollegiate Livestock Judging Contests will be chosen from the students in this course.

ADSC 3230-3230L. Light Horse Evaluation and Selection. 2 hours. 4 hours lab per week.
Evaluation of horses relating to riding qualities and anatomical structure. Prerequisite for competing in collegiate horse judging contests.

ADSC 3250-3250L. Advanced Horse Evaluation and Selection. 2 hours. 4 hours lab per week.
Prerequisite: ADSC 3230-3230L.
Evaluation of conformation and performance of various breeds. Teams will be selected to compete in intercollegiate horse judging contests.

ADSC 3260-3260L. Dairy Cattle Evaluation and Selection. 2 hours. 4 hours lab per week.
Principles and practices concerned with the evaluation of type in dairy cattle, with special emphasis on show ring judging.

ADSC 3270-3270L. Advanced Dairy Cattle Evaluation and Selection. 2 hours. 4 hours lab per week.
Prerequisite: ADSC 3260-3260L.
A continuation of Dairy Cattle Evaluation and Selection. The University will be represented at national intercollegiate judging contests in the fall by students chosen from this course.

ADSC 3300-3300L. Animal Nutrition and Metabolism. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ADSC 2010 and ADSC 2010L.
Corequisite: (CHEM 2100 and CHEM 2100L) or (CHEM 2211 and CHEM 2211L).
Animal nutrition and metabolism. The chemical composition of nutrients, biochemical reactions and their regulation as related to the metabolic pathways associated with the assimilation of nutrients and application of these concepts in the growth and performance of animals of economic importance.

ADSC 3310-3310L. Feeds and Feeding. 3 hours. 1.5 hours lecture and 3 hours lab per week.
Prerequisite: ADSC 3300-3300L.
Composition and properties of feedstuffs and application of principles of nutrition in the use of these feedstuffs in feeding livestock.

ADSC 3320. Animal Nutrition and Feeding. 3 hours.
Not open to students with credit in ADSC 3300-3300L or ADSC 3310-3310L.
Animal nutrition followed by feed identification and ration formulation. This course is designed for non-animal science majors.

ADSC 3400-3400L. Physiology of Reproduction in Farm Animals. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ADSC 2010 and ADSC 2010L and BIOL 1108-1108L.
Physiology of reproduction in farm animals.

ADSC 3420. Physiology of Lactation in Farm Animals. 2 hours.
Prerequisite: BIOL 1108-1108L.
The anatomy, physiology, and function of the mammary gland of farm animals.

ADSC 3600-3600L. Beef Cattle Production and Management. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite or corequisite: Two of the following: ADSC 3110 or ADSC 3310-3310L or ADSC 3400-3400L (one of these courses must be taken as a prerequisite).
Breeding, feeding, and management of beef cattle.

ADSC 3610-3610L. Pork Production and Management. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite or corequisite: Two of the following: ADSC 3110 or ADSC 3310-3310L or ADSC 3400-3400L (one of these courses must be taken as a prerequisite).
Breeding, feeding, and management of swine.

ADSC 3620-3620L. Dairy Cattle Production and Management. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite or corequisite: Two of the following: ADSC 3110 or ADSC 3310-3310L or ADSC 3400-3400L (one of these courses must be taken as a prerequisite).
Effects of environment and its interactions with physiology and inheritance upon performance of the cow and the cost of producing milk. This includes the effects of climate, health, sanitation, forage systems, housing, equipment, and waste management.

ADSC 3630-3630L. Horse Production and Management. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite or corequisite: Two of the following: ADSC 3110 or ADSC 3310-3310L or ADSC 3400-3400L (one of these courses must be taken as a prerequisite).
Breeding, feeding, and management of horses.

ADSC 3640-3640L. Sheep and Goat Production and Management. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite or corequisite: Two of the following: ADSC 3110 or ADSC 3310-3310L or ADSC 3400-3400L (one of these courses must be taken as a prerequisite).
Breeding, feeding, and management of sheep and goats.

ADSC(FDST) 3650-3650L. Introductory Meat Science. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite or corequisite: BIOL 1108-1108L.
Meat science focusing on the meat industry, role of muscle foods in the human diet, meat inspection, muscle structure and function, conversion of muscle to meat, anatomy, factors influencing meat quality, meat processing, and meat safety and quality control.

ADSC 3700. Special Problems in Animal and Dairy Science. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Individual study, readings, and research projects in

laboratories or on experimental farms involving animal or meat-related topics.
Non-traditional format: Special problems course; students and faculty set times as needed.

ADSC 3810. Animal and Dairy Science Orientation. 1 hour. 1 hour lab per week.
Areas of specialization with programs of study, course offerings, career opportunities, and leaders in related Animal and Dairy Science businesses.

ADSC 3830. Equine Science Seminar. 1 hour. 1 hour lab per week.
Industry awareness and exploration of various topics associated with equine health and production.

ADSC 3910. Internship in Animal and Dairy Science. 3-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Work experiences in livestock production and management, agribusiness or service organizations.
Non-traditional format: Internships require students and faculty to hold discussions on non-traditional schedules.

ADSC 4010. Issues in Animal Agriculture. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ADSC 3600-3600L or ADSC 3610-3610L or ADSC 3620-3620L or ADSC 3630-3630L or ADSC 3640-3640L.
Impact of livestock production on society and the environment; role of animal products in the human diet; ecological aspects of animal production, animal welfare, media relations.

ADSC 4100/6100. Advanced Genetics of Livestock Improvement. 3 hours.
Prerequisite: ADSC 3110 or permission of department.
The development of practical and genetically sound programs involving the study and application of genetic principles underlying selection, systems of mating, and performance testing. Major emphasis will be on characters of economic importance in meat animals.

(ADSC)FDST 4140/6140-4140L/6140L. Advanced Meat Science. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FDST(MIBO) 4030/6030-4030L/6030L and FDST 4040/6040-4040L/6040L.
Meat processing and technology, scientific basis for meat as a food, USDA and FDA regulations governing meat processing, and the latest innovations in commercial meat processing.

ADSC 4150/6150. Microbial Ecology of the Rumen. 3 hours.
Prerequisite: BCMB 4020/6020 or MIBO 4090/6090 or permission of department.
The rumen microbial ecosystem that will examine the biochemistry, ecology, nutrition, physiology, and taxonomy of rumen microorganisms. The symbiotic relationship between rumen microorganisms and the nutrition of the ruminant animal. Manipulation of rumen fermentation to maximize host-animal production.

ADSC 4200. Livestock Merchandising. 2 hours.
Prerequisite: ADSC 2010 or permission of department.
Principles and activities involved in successfully promoting and merchandising livestock. Presentations by industry leaders in the field of livestock merchandising. A livestock auction will be held at the conclusion of the course.

ADSC 4300. Food Animal Growth and Development. 3 hours.
Prerequisite: ADSC 3300-3300L or BCMB(BIOL)(CHEM) 3100 or permission of department.
Physiological, nutritional, and genetic regulation of growth, development, and body composition in food animals. Emphasis will be placed on skeletal muscle, adipose tissue, and bone development, as it relates to the whole-body growth and composition.

(ADSC)ANNU 4360/6360. Ruminant Nutrition. 3 hours.
Prerequisite: ADSC 3300-3300L and BCMB (BIOL)(CHEM) 3100.
Digestive physiology and metabolism of the rumen. Treats systematically the diversity of function, complex symbiotic relationships of the rumen microflora/microfauna, and the physiology and metabolism of the rumen as related to digestion, absorption, and utilization of nutrients.

(ADSC)ANNU(POUL) 4370/6370. Monogastric Nutrition. 3 hours.
Prerequisite: [ADSC 3300-3300L or POUL 3750] and BCMB(BIOL)(CHEM) 3100.
Comparative nutrition of monogastric animals, with special but not exclusive, consideration of poultry and swine.

ADSC 4400/6400-4400L/6400L. Applied Reproduction in the Horse. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: ADSC 3400-3400L.
Management of reproduction in the horse for efficient production. Application of reproductive management systems.

ADSC 4410/6410-4410L/6410L. Applied Reproductive Management in Cattle and Swine. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: ADSC 3400-3400L.
Management of reproduction in farm animals for efficient livestock production. Application of reproductive management, principles associated

with artificial insemination, embryo transfer, pregnancy detection, semen collection, and reproductive record management.

ADSC 4500-4500L. Operant Conditioning and Training of Horses. 3 hours. 6 hours lab per week.
Prerequisite: ADSC 3630-3630L or permission of department.
Behavior modification principles applied to training young horses.

(AESC) Agricultural and Environmental Sciences

College of Agricultural and Environmental Sciences

AESC 1010. Orientation to Agricultural and Environmental Sciences. 1 hour.
Not open to students with credit in AGRI 1010.
Designed to assist College of Agricultural and Environmental Sciences undecided freshmen and transfers in deciding on a major, and to provide information related to campus services and activities.

AESC 3150. Topics in International Agriculture. 1-3 hours. Repeatable for maximum 3 hours credit.
Not open to students with credit in AGRI 3150.
Prerequisite: Junior standing or permission of department.
Individual or group study through reading and/or research of selected topics in international agriculture.
Non-traditional format: Students will work independently on individual topics and turn in a paper at the end of the semester. No formal class time is required.

AESC 3910. International Agriculture Internship. 3 hours.
Not open to students with credit in AGRI 3910.
Prerequisite: Junior standing or permission of department.
Placement with an international public or private organization in a foreign country. If located near a university, student may also enroll in a course.
Non-traditional format: Internship abroad.

AESC 3920. Agricultural and Environmental Sciences Internship. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Practical experience in the application of agricultural and environmental principles and procedures learned outside of a formal classroom setting.
Non-traditional format: The student will spend the semester in either a university, industry, or governmental setting obtaining hands-on experience in agricultural and environmental sciences.

(AESC)EETH 4190/6190. Agricultural Ethics. 1 hour. 2 hours lab per week.
Ethical issues in agriculture. Topics include animal rights/animal welfare, agriculture as a business/ agriculture as a way of life, sustainable agriculture, (bio)technology, migrant farm workers, foreign aid, world hunger, and related topics.

AESC 4960. Undergraduate Research in Agricultural and Environmental Sciences. 2-6 hours. Repeatable for maximum 6 hours credit.
Not open to students with credit in AESC 4970H or AGRI 4970H.
Prerequisite: Junior or senior standing.
Directed research in agricultural and environmental sciences and policy; food and natural resources; engineering and technology, economic development, and international agriculture.
Non-traditional format: Credit hours are based on directed study project.

AESC 4970H. Directed Reading and/or Projects (Honors). 3 hours. Repeatable for maximum 6 hours credit.
Not open to students with credit in AGRI 4970H.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or research projects under the direction of a faculty director.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

AESC 4990H. Honors Thesis. 3 hours.
Not open to students with credit in AGRI 4990H.
Prerequisite: Senior standing and permission of Honors.
Honors thesis under the guidance of a faculty member.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

(AFAM) African American Studies

College of Arts and Sciences

(AFAM)ZULU 1001. Elementary Zulu I. 4 hours.
Fundamentals of the Zulu language and culture which has spread to cover communities in South Africa as well as outside of South African borders to the Southern parts of Zimbabwe, and parts of Botswana, Lesotho, and Swaziland. Emphasis will be placed on grammar, pronunciation, reading, writing, and conversational skills.

(AFAM)YORB 1020. Elementary Yoruba II. 4 hours.
Prerequisite: YORB 1010.
A continuation of Elementary Yoruba I. Increased

focus on grammar and culture, reading and conversation.

AFAM 2000. Introduction to African American Studies. 3 hours.
Cultural, social, and historical movements among Americans of African descent.

AFAM 2000H. Introduction to African American Studies (Honors). 3 hours.
Prerequisite: Permission of Honors.
Cultural, social, and historical movements among Americans of African descent.

(AFAM) ZULU 2001. Intermediate Zulu I. 3 hours.
Prerequisite: ZULU 1002.
Intensive oral and written training in Zulu, with emphasis on fluent conversation skills and comprehension of literature written in Zulu. The structure of the language will be taught directly and indirectly through written texts and oral assignments, tests, midterm and final exams, and computer-assisted exercises, tests.

(AFAM) ZULU 2002. Intermediate Zulu II. 3 hours.
Prerequisite: ZULU(AFAM) 2001.
A continuation of Intermediate Zulu I. The course will enhance the student's knowledge of Zulu grammar and culture, build on the vocabulary, and intensive knowledge of elementary literature written in the language. It will also help students to understand the interrelationship among language structure, culture, and history of the Zulu speaking people.

(AFAM)RELI 2005. African American Religions: An Introduction. 3 hours.
Major and selected contemporary religious groups and movements among African Americans.

(AFAM)YORB 2010. Intermediate Yoruba I. 3 hours.
Prerequisite: YORB(AFAM) 1020.
Focus on developing fluency in spoken and written Yoruba. Oral work geared towards building effective communication in day-to-day situations and functional tasks. Readings in authentic Yoruban texts of increasing complexity. Advanced cultural discussion.

(AFAM)SOCI 2020. African American Society. 3 hours.
The class, status, and power relations of African Americans as part of both the United States social structure and the African diaspora.

(AFAM)PSYC 2150. Understanding Cultural Diversity. 3 hours.
Cross-cultural psychology, including an examination of issues such as conformity, leadership, and attributional style as they vary across different cultures, with consideration of their implications for the emerging world.

(AFAM)CMLT 2600. Multicultural Black Diaspora Literature. 3 hours.
Prerequisite: ENGL 1102.
Multicultural literature of the world-wide dispersion of Africans and people of African descent based on select representative works of African-American, African-Caribbean, and African literature.

(AFAM)SPCM 2810. Communication in African American Communities. 3 hours.
Rhetorical strategies and patterns of orality in African American communication, communication styles in conflict, and skill development for cultural interaction.

(AFAM)SOCI 2820. Race and Ethnicity in America. 3 hours.
The causes and consequences of race and ethnic discrimination in America, with a focus on ethnic competition and conflict.

(AFAM)MUSI 2960. African American Percussive Music: From Africa to the Americas. 3 hours. Repeatable for maximum 6 hours credit.
Traditional and contemporary African American percussion music beginning with its African heritage and tracking its development throughout the Americas, with particular emphasis on the United States. Teaching/learning strategies include in-class performance, demonstrations, audiovisuals, and lectures. No previous music performance background is required.

(AFAM) RELI 3000. The Bible in the Third World. 3 hours.
Prerequisite: RELI 1001 or RELI 1002 or permission of department.
Interpretations of the Bible in Africa, Asia, Central and South America and the influence upon minority communities in the United States.

(AFAM)ZULU 3001. Advanced Zulu I. 3 hours.
Prerequisite: ZULU(AFAM) 2002.
The course will prepare students to work with advanced authentic Zulu materials in literary writings. The focus will be on critical reading and the interpretation of standard and colloquial Zulu.

(AFAM)ZULU 3002. Advanced Zulu II. 3 hours.
Prerequisite: ZULU(AFAM) 3001.
Development of the already acquired skills in the language and strengthening of the students' proficiency in reading, writing, and critiquing literary texts written in the language. There will be extensive oral practice, reading and comprehension exercises in addition to assigned literary texts from a selected list of literature (fiction and non-fiction) from South Africa.

(AFAM)SWAH 3010. Advanced Swahili I. 3 hours.
Prerequisite: SWAH 2020.
Preparation for study or research using authentic Swahili material. Provides additional knowledge of East Africa through geography, history, political, and economic structures. Focus on critical reading and the interpretation of standard and colloquial Swahili.

(AFAM)YORB 3020. Advanced Yoruba II. 3 hours.
Prerequisite: YORB 3010.
Advanced readings, novels, thematic texts, and rhetoric. Focus on developing comprehension of textual materials. Introduction to scientific and other specialized materials.

(AFAM)SWAH(YORB) 3030. Introduction to African Languages, Cultures, and Folklore. 3 hours.
The languages, cultures, folklore, orature, and literature of East Africa and West Africa. While texts will be available in English, students with proficiency in Swahili or Yoruba will examine the literature in its original language.

AFAM (PSYC) 3150. Introduction to Black Psychology. 3 hours.
Prerequisite: Permission of department.
Deconstruction of traditional thought, behavior, and development as well as reconstruction of the same on contemporary terms; testing of nuances and varieties of multicultural and indigenous models. The designs and projected future of the Black Psychology Movement.

(AFAM) ENGL 3230. Development of African American Literature. 3 hours.
Prerequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
African American literature since 1773, particularly 1830 to the present: Frederick Douglass, Harriet Jacobs, Zora Neale Hurston, Langston Hughes, Richard Wright, Dorothy West, Ralph Ellison, James Baldwin, Alice Childress, Lorraine Hansberry, Amiri Baraka, Toni Morrison, Alice Walker, and August Wilson, including diverse voices rooted in the folk origins for literary forms.

(AFAM) SOCI 3300. Global Perspectives on Racism and Sexism. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Race and gender relations and discrimination around the globe; the origins and practice of race and gender domination and empowerment in the Americas, Africa, Asia, Europe, the Middle East, and the Pacific Rim.

(AFAM) SOCI 3310. Race and Culture. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Evolution of cultures among racial groups as part of, and in contrast to, Western civilization. Particular attention is given to the ways race and culture intersect to provide styles, practices, and patterns of living for individuals in contemporary society.

(AFAM)SPCM 3820. Interracial Communication. 3 hours.
An applied approach to understanding the significance of interracial communication in Western Society. The societal influences of history, language, and mass media in shaping our knowledge and understanding of positive interracial relationships.

AFAM 3880. African American Folklore. 3 hours.
Prerequisite: ENGL 3010 or permission of department.
African American folk expressions: their functions and their relationships with folk expressions of other peoples. Folk speech (proverbs, riddles, signifying, playing the dozens), folk narrative (animal tales, slave stories, modern legends, jokes, toasts, rap songs), folk songs (African songs, gospel songs, work songs, ballads, blues songs).

(AFAM)SWAH 3990. Directed Study in Swahili Language and Literature. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent study and research in Swahili language and literature under the direction of individual faculty members. Focus on reading and analysis of Swahili literary writings (including works in translation).
Non-traditional format: Directed study.

(AFAM)ENGL(LING) 4040. Language Use in the African American Community. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
History and structure of the speech and language styles used in the African American community; examination of linguistic and cultural issues that confront the majority of African Americans; the role of the vernacular language of African Americans in society.

(AFAM)HIST 4055/6055. Historical Survey of African American Thought. 3 hours.
This course examines representative works of such nineteenth- and twentieth-century social, cultural, and political thinkers as Frederick Douglass, Cornel West, Anna J. Cooper, and Angela Davis among other outstanding women and men who have contributed significantly to the intellectual life of the African American community.

AFAM(POLS) 4200. African American Social Change. 3 hours.
Prerequisite: POLS 1101 and AFAM 2000.
African American social movements, principally those in the United States, such as the convention and colonizing movements of the nineteenth century and the Civil Rights and Black Power movements of the twentieth century.

(AFAM)RELI 4201/6201. African American Religious History. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The religious traditions of African Americans from Colonial times to the present; major religious movements, personalities, and ideas and their relationship to various aspects of American culture.

(AFAM)RELI 4202/6202. Southern Religious History. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The origins, growth, and current practices of religion in the American South. The interaction between religion and other aspects of Southern culture, such as racial and gender concerns, education, Darwinian science, temperance, and politics.

(AFAM) RELI 4203/6203. The Bible in the Black Church. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Biblical interpretation in black America from 1865 to the present.

AFAM 4250. African American Seminar. 3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: (AFAM 2000 and AFAM 3880) or AFAM(POLS) 4200.
Recurring topics and themes in African American life from the perspective of the behavioral sciences and humanities.

(AFAM)SOCI 4370. Seminar in Race and Ethnicity. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Special topics in race and ethnicity for advanced undergraduates.

AFAM(DRAM) 4490/6490. African American Women in Cinema: Image and Aesthetics. 3 hours.
Prerequisite: Permission of department.
Selected films by and about African and African American women. A historical/critical overview of the presentation of these women in cinema with emphasis on contemporary African and African American women film makers.

AFAM(PSYC) 4500/6500. Psychology of Prejudice. 3 hours.
Prerequisite: (PSYC 1101 or SOCI 1101) and senior standing.
Motivational, cognitive, social, and cultural factors that lead to discrimination in our society and various perspectives found in the research on discrimination.

AFAM(PSYC) 4550/6550. Classic Studies in Black Psychology. 3 hours.
Prerequisite: AFAM(PSYC) 3150 or permission of department.
Studies which have had major social or scientific impact on the lives of Black Americans and the way black people have been viewed within psychology. Approach is historical and interdisciplinary.

(AFAM)POLS 4570. African American Social Change. 3 hours.
Prerequisite: POLS 1101 or AFAM 2000.
African American social movements, principally those in the United States, such as the convention and colonizing movements of the nineteenth century and the civil rights and black power movements of the twentieth century.

(AFAM)ENGL 4620. African American Poetry. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
African American poetry from the colonial period to the present, including slave and folk songs of the mid-nineteenth century, the Harlem Renaissance of the 1920's, and contemporary poetry. Emphasis on such figures as Langston Hughes, Margaret Walker, Gwendolyn Brooks, Sonia Sanchez, Amiri Baraka, Yusef Komunyakaa, Rita Dove, Kevin Young, and others.

(AFAM)ENGL 4630. African American Fiction. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Important African American stories and novels from the nineteenth and twentieth centuries, including works by such authors as Frances Harper, Jean Toomer, Ralph Ellison, James Baldwin, Alice Walker, and Toni Morrison.

(AFAM)SPCM 4810. African American Rhetoric and Communication. 3 hours.
The history and criticism of the communication of African American speakers, with emphasis upon oral rhetoric relating to social-political development since 1860.

(AFAM)SPCM 4830/6830. African American Relational Communication. 3 hours.
Undergraduate prerequisite or corequisite: SPCM 1500 or SPCM 3700 or AFAM 2000 or PSYC(AFAM) 2150 or AFAM(PSYC) 3150.
Interpersonal communication within African American relationships from a holistic framework. Historical, sociological, and psychological factors that affect individual behaviors within these relationships, including gender socialization from Africa to America.

AFAM 4850. Directed Major Projects in African American Studies. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
An independent directed course for advanced undergraduate students with a major interdisciplinary project that goes beyond the disciplinary boundaries of a traditional department. The student has two major projects, one each for Georgia State Leadership, through the Fanning Center, and the Washington Center's Minority Leadership Fellowship Program.
Non-traditional format: Besides a 20 page paper of revised excellence, a practicum for the project (two months study in The Washington Center's Minority Leader Fellowship Program, for example) will complete a very rigorous enrichment through out-of-class learning.

AFAM(ROML) 4860/6860. Topics in Afro-Hispanic Identity. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Representations of Africa and African American culture in Hispanic Literature by writers of African descent. By covering a variety of genres, the course will provide discussion about a cultural identity that is constantly in dialogue with dominant discourses. The course will incorporate critical texts.

(AFAM)ENGL 4880. Topics in African American Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Selected topics in African American literature such as African American autobiography, Harlem Renaissance, Gwendolyn Brooks and Richard Wright, and Black American literature and aesthetics.

(AFST) African Studies

College of Arts and Sciences

(AFST) HIST 2052. Multiculturalism in Modern America. 3 hours.
United States history since 1865 from a multicultural and multiethnic perspective. The course will emphasize social, cultural, and political dimensions of the American experience, paying particular attention to issues of race and ethnicity. Highlights the contributions of the many different peoples who make up America.

AFST(ANTH)GEOG(CMLT)(HIST)(SOCI) 2100. Introduction to Africa. 3 hours.
The history, physical environment (landforms, vegetation, and climate), and sociocultural environment (artistic, political, and social development) of Africa.

(AFST) HIST 2501. Introduction of African History to Sixteenth Century. 3 hours.
Cultural history of Africa to sixteenth century. Origins of agriculture, rise and growth of complex societies and states, spread and importance of Islam, slavery and diaspora issues.

(AFST) CMLT 3150. Introduction to Modern African Literature. 3 hours.
Prerequisite: ENGL 1102.
The literature of twentieth-century Africa in translation with emphasis on the African novel.

(AFST) HIST 3500. Seventeenth Through Nineteenth-Century Southern Africa. 3 hours.
Social, political, and economic changes in southern African societies (South Africa, Namibia, Lesotho, Botswana, Swaziland, Zimbabwe, and Mozambique) as they assimilated non-African peoples, their ideas, and material culture. Independent, viable and adaptable, Africans engaged Portuguese, British, Boers, and Germans as they competed for land, cattle, and trade.

(AFST) HIST 3511. East Africa to the Nineteenth Century. 3 hours.
Economic, political, and cultural history of East Africa to the nineteenth century. Growth of agricultural systems, forms and functions of states and kingdoms, the world of the Indian Ocean, slavery and rebellion.

(AFST) HIST 3512. East Africa in the Nineteenth and Twentieth Centuries. 3 hours.
Economic and cultural history of East Africa in the nineteenth and twentieth centuries. Food, trade, commodification, slavery, rage, missionary and colonial interests, nationalisms, independence, art and literature.

(AFST) CMLT 4880/6880. Survey of African Literature I. 3 hours.
African literature from its ancient oral traditions to the European colonial period based on works of African authors written in English and English translations of the African works.

(AFST) CMLT 4890/6890. Survey of African Literature II. 3 hours.
African literature since the independence of the African people from European colonial rule.

(AGCM) Agricultural Communications

College of Agricultural and Environmental Sciences, Department of Agricultural Communications

AGCM 3910. Internship in Agricultural Communication. 2-6 hours. Repeatable for maximum 6 hours credit.
Experiential and applied learning in an agricultural communication organization.
Non-traditional format: Internship.

AGCM 4000. Special Problems in Agricultural Communication. 1-3 hours. Repeatable for maximum 3 hours credit.
Directed study of topic applicable to student's program of study.
Non-traditional format: Students will work independently on individual topics.

(AIRS) Aerospace Studies

Division of the Armed Services, Department of Aerospace Studies

AIRS 1001. The Air Force Today I. 2 hours. 1 hour lecture and 2 hours lab per week.
The Air Force in the contemporary world. Study of total force structure, strategic offensive and defensive forces, general purpose forces, and aerospace forces. Introduces tactical air forces and operations, and aerospace support forces. Leadership laboratory activities are included.

AIRS 1002. The Air Force Today II. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: AIRS 1001 or permission of department.
Continues study of tactical air forces and operations, counterinsurgency and special operations, and aerospace support forces. Aerospace defensive forces, including manned aircraft and missile defensive forces. Introduction to Army, Navy, and Marine general purpose forces. Leadership laboratory activities are included.

AIRS 2001. Development of Air Power I. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: AIRS 1002 or permission of department.
Development of air power from balloons and dirigibles up to the Korean War. Students gain an understanding of the use of air power and the technological changes occurring during this period. Leadership laboratory activities are included.

AIRS 2002. Development of Air Power II. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: AIRS 2001 or permission of department.
Continues the study of air power following the Korean War. It deals with the peaceful employment of United States air power in relief missions and civic action programs and the air war in South East Asia. Leadership laboratory activities are included.

AIRS 3001. Defense Management and Administration I. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: AIRS 2002 or permission of department.
Emphasizes the individual as a manager in an Air Force environment. Individual motivation and behavioral processes, leadership, communication and group dynamics provide a foundation for the development of the junior officer's professional skills as an Air Force officer. Basic managerial processes involving decision making, utilization of analytic aids in planning, organizing, and controlling in a changing environment.

AIRS 3002. Defense Management and Administration II. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: AIRS 3001 or permission of department.
Managerial and leadership problems found in industry and government. Actual Air Force cases are used to enhance the learning and communication process. Organizational and personal values, management of forces in change, managerial strategy and tactics. Application of learned theories to potential problems the new officer may encounter.

AIRS 4001. National Security Forces in Contemporary American Society I. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: AIRS 3002 or permission of department.
The evolution and formulation of American national security policy, especially as it concerns the military instrument of national power. Examines selected regional security issues. Impact of technological and international developments on strategic preparedness: nuclear, limited, and low-intensity conflicts; arms control and peacekeeping. Examines the military officer's role in national security.

AIRS 4002. National Security Forces in Contemporary American Society II. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: AIRS 4001 or permission of department.
Role of professional military officer in carrying out national policy; traditional and contemporary aspects of professionalism; and professional relationships and ethics. The military legal system is introduced. Finalizes the student's preparation for commissioning and active duty Air Force service.

(ALDR) Agricultural Leadership

College of Agricultural and Environmental Sciences

ALDR 2900. Introduction to Leadership and Service. 3 hours.
Not open to students with credit in AGRI 3000.
An interdisciplinary approach to current issues related to leadership in contemporary and changing society. Exploration of classic and emerging models, roles of leaders and followers, concepts of effective leadership, ethical issues, with special focus on leadership as service in teams, organizations, communities, and society.

ALDR 3910. Internship in Leadership. 3 hours.
Prerequisite: Permission of department.
Experiential and applied work experience in leadership or service organization.
Non-traditional format: Internship with hours to be arranged.

ALDR 4000. Directed Project in Leadership. 3 hours.
Guided learning experience applicable to student's program of study under direction of faculty advisor.
Non-traditional format: Individual completion of a directed project.

ALDR 4500. Advanced Leadership Theory and Process. 3 hours.
Prerequisite: ALDR 2900 or permission of department.
Interdisciplinary discussion of current issues in leadership theory and process with focus on application to teams and organizations. Topics include more in-depth coverage of theory, team process, conflict resolution, sources and responsibilities of power and authority, and the process of change.

ALDR 5050. Communication in the Agricultural Professions. 3 hours.
Not open to students with credit in AGRI 5050.
Theory and skill development of effective communication strategies for success in agricultural professions. Organizational, team, and interpersonal contexts with special focus on diversity issues, communication for change, enhancing the perception of agriculture, and effects of communication technology on information dissemination.

ALDR 5700/7700. International Agricultural Development. 3 hours.
International agricultural development programs described and studied, stressing the Developing World's perspective. Analysis of factors affecting success in leadership roles for international cooperation, transfer of technology, agricultural extension and education, and related program development. Case studies reviewed and discussed. Exploration of issues in international agriculture and human resource development. Course dynamics emphasize group discussions, projects, and reports.

(ANNU) Animal Nutrition

College of Agricultural and Environmental Sciences

ANNU(ADSC) 4360/6360. Ruminant Nutrition. 3 hours.
Prerequisite: ADSC 3300-3300L and BCMB(BIOL)(CHEM) 3100.
Digestive physiology and metabolism of the rumen. Treats systematically the diversity of function, complex symbiotic relationships of the rumen microflora/microfauna, and the physiology and metabolism of the rumen as related to digestion, absorption, and utilization of nutrients.

ANNU(ADSC)(POUL) 4370/6370. Monogastric Nutrition. 3 hours.
Prerequisite: [ADSC 3300-3300L or POUL 3750] and BCMB(BIOL)(CHEM) 3100.
Comparative nutrition of monogastric animals, with special but not exclusive, consideration of poultry and swine.

(ANTH) Anthropology

College of Arts and Sciences, Department of Anthropology

ANTH 1102. Introduction to Anthropology. 3 hours.
Not open to students with credit in ANTH 2120H.
Variation in human culture and biology from the earliest beginnings to the present, including relationships between human biology, culture, and the environment, and an understanding of contemporary cultural differences.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

(ANTH)CLAS 2000. Introduction to Classical Archaeology. 3 hours.
Concepts and principles of archaeology, including site formation, survey and excavation techniques, artifact retrieval and analysis, chronology, archaeological theory, and contemporary issues such as "ownership" of the past; focus on sites from Greek and Roman antiquity.

(ANTH)HONS 2040H. Honors Social Sciences. 6 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: ENGL 1101 and permission of Honors.
Concepts integrating history, government, and the social and behavioral sciences through lectures, seminars, individual research or projects, and writing.
Non-traditional format: Discussion periods include writing and critiquing papers, and student presentations.

(ANTH)HONS 2050H. Honors Social Science. 6 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: ENGL 1101 and permission of Honors.
Concepts integrating history, government, and the social and behavioral sciences through lectures, seminars, individual research or projects, and writing.
Non-traditional format: Discussion periods include writing and critiquing papers, and student presentations. May be offered daily during May session, or as part of a Study Abroad program.

ANTH 2070H-2070L. Culture and Human Biology (Honors). 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: Permission of Honors.
The biological bases of human social and cultural behavior from the perspective of biological anthropology. Includes instruction in laboratory methods. Evolutionary history, primate behavior, and human biological diversity will be applied to understanding the interrelationship of biology, culture, and society.

(ANTH)AFST (GEOG)(CMLT)(HIST)(SOCI) 2100. Introduction to Africa. 3 hours.
The history, physical environment (landforms, vegetation, and climate), and sociocultural environment (artistic, political, and social development) of Africa.

ANTH 2120H. Introduction to Anthropology (Honors). 3 hours.
Not open to students with credit in ANTH 1102.
Prerequisite: Permission of Honors.
Variation in human culture and biology from the earliest beginnings to the present, including relationships between human biology, culture, and the environment, and an understanding of contemporary cultural differences.

ANTH 2310. Archaeology of Georgia. 3 hours.
Prerequisite: ANTH 1102 or permission of department.
Twelve thousand years of life in Georgia with an emphasis on relationships to the environment. Examines lifeways of prehistoric and early historic peoples, and the history of Georgia archaeology.

(ANTH)PATH(BTNY) 3010. Fungi: Friends and Foes. 3 hours.
Impact of fungi on human affairs. Historical and current uses of fungi by humans as well as the roles of fungi in various ecosystems.

ANTH 3060. Introduction to Paleoanthropology. 3 hours. 3 hours lecture and 1 hour lab per week.
Prerequisite: ANTH 1102 or permission of department.
Paleoanthropology as the integrative biocultural study of early human evolution, drawing on human paleontology and paleolithic archaeology to give a holistic understanding of the transitions leading to Homo Sapiens.

ANTH(LING) 3080. Anthropology of Language. 3 hours.
Prerequisite: ANTH 1102 or LING 2100 or permission of department.
Anthropological studies in language, including origins and evolution, prehistory, geographical distribution, typology and classification, language and speech communities. Relationships between language and culture, language and society, and language and environment will be emphasized.

ANTH 3090. Evolution of Human Ecosystems. 3 hours. 3 hours lecture and 1 hour lab per week.
Prerequisite: ANTH 1102 or permission of department.
Prehistoric and historic human ecosystems, from hunting and gathering to states and empires, viewed from a biocultural perspective. Changing human-environment relations over the past 10,000 years.

ANTH 3100. Peoples of the World. 3 hours.
Prerequisite: ANTH 1102 or permission of department.
The way of life of a number of societies from around the world, including hunting and gathering bands, farming and herding tribes and chiefdoms, and pre-industrial states and peasantry.

(ANTH)CMLT 3180. Introduction to East Asian Cultures. 3 hours.
Cultures of China, Japan, Korea, and Vietnam, with emphasis on the formation of Chinese culture and its diffusion and variation within the other national groups.

(ANTH)CMLT 3190. Myth in Culture. 3 hours.
Literary and anthropological approaches to the study of myth in culture.

ANTH 3220. Introduction to Prehistoric Archaeology. 3 hours.
Basic concepts and principles of archaeology. Topics covered include history of archaeology, site formation processes, survey and excavation techniques, artifact typology and analysis, chronology, activity analysis, and general archaeological theory.

ANTH 3230. Material Culture. 3 hours.
Prerequisite: ANTH 1102 or ANTH 2120H or permission of department.
Relationships between humans and material things, with a strong emphasis on the material culture of Georgia from 10,000 BC until about AD 1900.
Non-traditional format: Lecture will be presented within laboratory format to allow strong hands-on component to the course.

(ANTH) CMLT 3240. The Gypsies: Last Nomads of the Modern World. 3 hours.
The Roma tribes of Central and Eastern Europe, including their cultures, customs, languages, literature, and music.

(ANTH) CMLT 3241. Minorities in Europe. 3 hours.
Anti-semitism and anti-Roma sentiments and practices in Central and East Europe. How the European Union is addressing this problem and future prospects for these minorities at risk.

ANTH 3250. Old World Archaeology. 3 hours.
Cultural developments in the Old World from the first hominid to the beginnings of urban civilization. Emphasis on bio-cultural and environmental adaptation in prehistory.

ANTH 3260. The Aztecs and the Maya. 3 hours.
Two indigenous urban societies of the Americas, from farming village beginnings to the Spanish conquest, and their lasting impact on modern middle American culture. Topics include ecology, economy, political organization, urbanism, militarism, beliefs, art, architecture, and literature.

ANTH 3270. New World Archaeology. 3 hours.
Cultural variation in the Americas from the end cf the Pleistocene to the time of intensive European contact, with emphasis on human/environmental interactions.

ANTH 3280. Archaeology of the Southwest. 3 hours.
Change and continuity in human life in North America's greater southwest, from the end of the Pleistocene to the twentieth century.

ANTH 3410. Contemporary Native America. 3 hours.
Cultural diversity of contemporary Native American tribes of the continental United States and Alaska, including lifestyles, politics, literature, music, art, and socioeconomic conditions.

ANTH 3410H. Contemporary Native America (Honors). 3 hours.
Not open to students with credit in ANTH 3410.
Prerequisite: (ANTH 1102 or ANTH 2120H) and permission of Honors.
Cultural diversity of contemporary Native American tribes of the continental United States and Alaska, including lifestyles, politics, literature, music, art, and socioeconomic conditions.
Non-traditional format: When course is taken as part of a summer field school, all lectures and demonstrations will total the equivalent amount of time as the traditional three hours lecture per week during a semester. The emphasis is on direct experiential contact with Native America — landscape, ceremony, and culture.

ANTH 3430. Indians of Mexico and Central America. 3 hours.
The native peoples of Mexico and Central America, including their past, traditional culture, and problems they face in the modern world.

(ANTH)HORT(BTNY) 3440. Herbs, Spices, and Medicinal Plants. 2 hours.
Historical and contemporary significance of herbs, spices, and medicinal plants in human culture and commerce; chemical and biological characteristics; commercial production techniques; application in modern and traditional medical systems.

(ANTH)SOCI(POLS) 3450. Sociopolitical Ecology. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The relationship between humans and their environment; ecological and social theories about environmental policies and problems.

ANTH 3460. Africa: Peoples and Institutions. 3 hours.
Prerequisite: ANTH 1102 or ANTH 2120H or permission of department.
Peoples and institutions of Africa, south of the Sahara, starting with earliest evidence of indigenous peoples, with special emphasis on current changes.

ANTH 3530. Anthropology of Folk Medicine. 3 hours.
A contrast of indigenous medical knowledge and practitioners with ancient formal systems of medicine and modern biomedicine, including medical pluralism in multi-ethnic societies, and the political economy of medicine.

ANTH 3540. Multicultural Health Care. 3 hours.
Multicultural diversity of beliefs and practices about health and illness of ethnic groups in the United States as it impacts on health care. Specific consideration of African Americans, Hispanic Americans, Native Americans, and Asian Americans.

ANTH 4020/6020. Indians of North America. 3 hours.
North American Indian cultures at the time of European contact. Additional topics include origin and development of Indian culture, impact of European contact on native cultures, and problems faced by Native Americans today.

(ANTH)HONS 4040H. Special Problems Seminar in Social and Behavioral Sciences. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the social and behavioral sciences which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during the May session, or as part of a Study Abroad program.

ANTH 4040/6040. Visual Anthropology. 3 hours.
Prerequisite: ANTH 1102 or permission of major.
Anthropological uses of film, video, and photographs in field research and in the presentation of research results, especially in relation to portrayal of indigenous people.

(ANTH)HONS 4050H. Special Problems Seminar in Social and Behavioral Sciences. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the social and behavioral sciences which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

ANTH 4050/6050. Cultural Anthropology. 3 hours.
Prerequisite: ANTH 1102 or permission of major.
The analysis and cross-cultural comparison of human institutions.

ANTH 4070/6070. Cultural Ecology. 3 hours.
Prerequisite: ANTH 1102 or permission of department.
The influence of the environment on human behavior and analysis of common adaptive responses among human populations to particular environments, emphasizing the role of culture in the ecological process.

ANTH(LING) 4090/6090. Cognitive Anthropology. 3 hours.
Prerequisite: ANTH 1102 or permission of major.
Folk systems of knowledge, with an emphasis on how people in different societies culturally identify, define, label, and classify phenomena such as color terms, plants, animals, and other environmental resources.

ANTH 4200/6200. Field Methods in Archaeology. 3-6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of major.
Corequisite: ANTH 4240/6240.
Archaeological reconnaissance, survey, excavation, laboratory preparation and analysis of collected materials.
Non-traditional format: This course is taught in the field at an archaeological site, followed by laboratory preparation and analysis of collected materials. During the summer, contact hours can exceed four hours per day, five days per week.

ANTH(ECOL) 4210/6210. Zooarchaeology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Animal remains recovered from archaeological sites, studied in light of zoological and archaeological methods and theories and interpreted in terms of human and animal behavior.

ANTH 4240/6240. Laboratory Methods in Archaeology. 3-6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of major.
Corequisite: ANTH 4200/6200.
Environmental, chronological, preservational, and analytical methods and techniques of archaeological research.
Non-traditional format: This course is taught in the field at an archaeological site. During the summer, contact hours can exceed four hours per day, five days per week.

ANTH(BIOL)(BTNY)(ECOL)(ENTO) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

(ANTH) (BIOL) (BTNY) ECOL (ENTO) (FORS) (GEOG) (GEOL) (PATH) 4261. Museum of Natural History Internship. 3 hours. Repeatable for maximum 6 hours credit. 7 hours lab per week.
Prerequisite: Permission of instructor and permission of Museum of Natural History.
Supervised work experience with a natural history collection. Students will learn techniques and other procedures for curating materials in a collection of their choice under the direction of collection personnel.
Non-traditional format: Students will maintain regular, weekly work schedules totaling 7 hours per week under the supervision of faculty and other collection personnel associated with the Museum of Natural History.

(ANTH) (FORS) RLST 4270. Field Studies in Natural Resource Recreation and Tourism. 3-6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Field studies to explore natural and cultural resource management issues including recreation, forestry, wildlife, tourism, environmental education, habitat conservation, and cultural land practices.
Non-traditional format: Two different options are available: (1) 4-week study abroad in New Zealand, Maymester (6 credits). (2) 1-week field study in Great Smokies National Park, summer semester (3 credits).

ANTH(ECOL) 4290/6290. Environmental Archaeology. 3 hours.
Survey of theories and methods used to study the relationship between humans and their environment. Emphasis is on subsistence strategies and environmental reconstructions based on archaeological evidence and the techniques of zooarchaeology, paleobotany, and paleonutrition.

ANTH(BTNY) 4300/6300-4300L/6300L. Ethnobotany. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ANTH 1102 or permission of major.
Ethnobotanical research, with focus on knowledge and utilization of the plant world in traditional societies. Comparisons of societies in tropical forest ecosystems and evaluation of issues relating to intellectual property rights and traditional peoples' knowledge of plant species with potential economic value.

ANTH 4310/6310. Archaeology of Eastern North America. 3 hours.
Prerequisite: ANTH 3220 or permission of major.
Prehistoric and early historic aboriginal cultural variation in Eastern North America.

(ANTH)GEOL 4340/6340. Archaeometry. 3 hours.
Prerequisite: GEOL(ANTH) 4700/6700.
Prerequisite or corequisite: GEOL 1121 or GEOL 1121H or GEOL 1122 or GEOL 2350H or ANTH 3220 or ANTH 3250 or ANTH (ECOL) 4210/6210 or CLAS (ANTH) 2000.
Methods of archaeometric analysis including chronometric and instrumental techniques. Absolute age dating and characterization of archaeological materials by physico-chemical analysis.

ANTH(HIST) 4470/6470. The Rise and Fall of the Southeastern Chiefdoms. 3 hours.
Development of the native societies of the southeastern United States, the exploration of the area by Spain in the sixteenth century, and the consequences of the meeting of the two peoples.

ANTH(HIST) 4480/6480. The Indians of the Old South. 3 hours.
Social history of the native peoples of the southern United States from the beginnings of the Spanish missions and the English deerskin and slave trade through Indian removal.

ANTH 4540/6540-4540L/6540L. Environment and Health. 3 hours. 2 hours lecture and 2 hours lab per week.
Bio-cultural medical anthropology focusing on the interaction among environment, biology, culture, and society as determinants of health and health problems.

ANTH 4550/6550. Ethnohistory. 3 hours.
Prerequisite: ANTH 1102 or permission of major.
The methods used by anthropologists to reconstruct the history of preliterate societies from archaeological evidence, documentary evidence, and oral traditions. The ethnohistory of southeastern United States.

ANTH 4560/6560. Anthropology of Development. 3 hours.
Prerequisite: ANTH 1102 or permission of major.
Relationships among development, culture and environment from the world system perspective. Concepts of dependence, hegemony, inequality, and resistance are brought to bear in exploring interlinkages between (and among) underdevelopment, resource exploitation, and local autonomy and self-reliance.

ANTH 4570/6570. Maritime Anthropology. 3 hours.
Prerequisite: ANTH 1102 or permission of major.
Coastal and marine regions of the world in terms of human occupation, resource utilization, social organization, and human-environmental relationships. Identification of issues in traditional and contemporary management of coastal and marine ecosystems.

ANTH 4580/6580-4580L/6580L. Ecology of Food, Diet, and Nutrition. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ANTH 1102 or permission of major.
The impact of cultural behavior on the acquisition, preparation, and consumption of potentially edible natural resources.

ANTH 4590/6590. Ecology and Evolution of Human Disease. 3 hours.
Prerequisite: Undergraduate level only: ANTH 1102 or BIOL 1104 or BIOL 1108-1108L; Graduate level only: Permission of major.
Ecological, evolutionary, and biocultural aspects of human disease. Subjects include the ecology of infectious/parasitic disease pathogens and their human hosts, the evolution of human host-pathogen interactions, the impact of cultural and demographic change in human populations, and the effects of global environmental change on human disease patterns.

ANTH 4630/6630. Field Methods in Cultural Anthropology. 6 hours. Repeatable for maximum 12 hours credit.
Prerequisite: ANTH 1102 and permission of major.
Supervised research projects in a field setting. Individual projects related to a central problem or issue, using research methods and techniques in cultural anthropology; interviews, surveys, participant-observation, and questionnaires are included.
Non-traditional format: Since research projects are supervised in a field setting, the amount of contact hours varies. Contact hours exceed the minimum.

(ANTH)RELI 4640/6640. Anthropology of Religion. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Anthropological approaches to the world's major religions as they relate to complex societies.

(ANTH)GEOL 4700/6700. Archaeological Geology. 3 hours.
Archaeological geology examines the use of earth science methods and theories in the study of archaeological sites and their contents. The four major areas covered include: (1) the archaeological site and geology; (2) age determination techniques; (3) exploration techniques; (4) artifact characterization.

ANTH 4710/6710-4710L/6710L. Human Origins. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ANTH 1102 and permission of major.
The evolutionary history of the human species through examination of the fossil record. The fossil record is introduced using precision casts of fossil specimens. Scientific methods are developed by rediscovering major findings. The influence of changing interpretations on the culture of science is demonstrated.

ANTH 4740/6740. Primate Ecology. 3 hours.
Not open to students with credit in PSYC 5770/7770.
Prerequisite: ANTH 1102 or permission of department.
Nonhuman primates in their natural habitats, including biogeography, feeding and ranging behavior, structure and social organization of groups in relation to environment, and primates as members of communities. Specific consideration of conservation issues, especially confrontation with human populations related to land use and development

ANTH 4790/6790. Human Adaptation. 3 hours.
Prerequisite: Undergraduate level only: ANTH 1102 and permission of major; Graduate level only: Permission of major.
Human diversity as response to environmental stress, from both a biological and cultural perspective. Topics include adaptation to heat, cold, altitude, malnutrition, and infectious disease; the impact of westernization and technological advancement on human biological function; and growth and development of the individual under environmental stress.

ANTH 4800/6800. Anthropological Approaches to Human Sexuality. 3 hours.
Surveys contemporary understanding of human sexual behavior from diverse anthropological perspectives.

(ANTH)LING 4860/6860. Sociolinguistics. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or ANTH(LING) 3080 or permission of department.
The study of language as a cultural and social phenomenon. Topics include language and meaning, language and world view, language and social behavior, and language and social issues.

ANTH 4900/6900. Special Topics in Anthropology. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: ANTH 1102 or permission of major.
Current topics in anthropology.

ANTH 4910. Senior Seminar in Anthropology. 3 hours.
Prerequisite: Permission of department.
Reading and discussion of contemporary issues in Anthropology. Students write and present a formal paper relating current method and theory to their research interests.

(ANTH)CRSS(ECOL)(GEOG)(HORT) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Prerequisite: Permission of department.

Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

(ANTH)CRSS(ECOL)(GEOG)(HORT) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3 hours. Repeatable for maximum 9 hours credit. 48 hours lab per week. Not open to students with credit in CRSS(ANTH) HORT 4940/6940.
Prerequisite: CRSS(ANTH)(ECOL)(GEOG) (HORT) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.
Non-traditional format: Students will tour a tropical country and receive on-site instruction at a series of different farms and ecological preserves over a period of 18 days.

ANTH 4950. Individual Special Topics in Anthropology. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: ANTH 1102 and permission of department.
Semi-independent study including reading and discussions of current developments in anthropology carried out as a contract between an individual student and an appropriate instructor.
Non-traditional format: Professor and student will meet as needed.

ANTH 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects with faculty direction.
Non-traditional format: Professor and student will meet as needed.

ANTH 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects with faculty direction.
Non-traditional format: Professor and student will meet as needed.

ANTH 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects with faculty direction.
Non-traditional format: Professor and student will meet as needed.

ANTH 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the field of his/her major or in a closely related field.
Non-traditional format: Professor and student meet as needed.

(ARAB) Arabic

College of Arts and Sciences, Department of Religion

ARAB 1001. Elementary Modern Standard Arabic I. 4 hours.
Fundamentals of grammar, pronunciation, reading, composition, and conversation of standard (including classical) Arabic.

ARAB 1002. Elementary Modern Standard Arabic II. 4 hours.
Prerequisite: ARAB 1001.
A continuation of Elementary Modern Standard Arabic I, including review and introduction of new content.

ARAB 2003. Intermediate Standard Arabic I. 3 hours.
Prerequisite: ARAB 1002.
Intermediate grammar, reading, conversation, and composition in standard (including classical) Arabic. Particular attention will be given to readings in Islamic literature.

ARAB 2004. Intermediate Standard Arabic II. 3 hours.
Prerequisite: ARAB 2003.
A continuation of Intermediate Standard Arabic I, including review and introduction of new content.

ARAB(LING) 3005. Advanced Standard Arabic I. 3 hours.
Prerequisite: ARAB 2004 or permission of department.
Advanced grammar, reading, conversation, and composition in standard (including classical) Arabic. Particular attention will be given to readings in Islamic literature.

ARAB(LING) 3006. Advanced Standard Arabic II. 3 hours.
Prerequisite: ARAB(LING) 3005 or permission of department.
A continuation of Advanced Standard Arabic I.

ARAB 4000/6000. Moroccan Dialectical Arabic. 3 hours.
Undergraduate prerequisite: Junior standing or permission of department.
Provides a basic capacity for "survival" Moroccan Arabic through the study of essential vocabulary and communication skills. Emphasizes the use of

day to day language necessary for student researchers of Moroccan culture by utilizing classroom training, "homestays" with Moroccan families, and interactions with Moroccans.
Non-traditional format: This is a maymester summer abroad program and will thus entail extensive travel throughout Morocco and homestays with Moroccan families, where the student will learn to use the skills acquired in class in real-life situations. The educational experience of this course will be of an on-going "linguistic immersion" type.

ARAB 4100/6100. Reading and Research in Arabic and Islamic Literature. 3 hours. Repeatable for maximum 9 hours credit. 9 hours lab per week.
Prerequisite: ARAB 2004 or permission of department.
Arabic and Islamic texts with emphasis upon extensive reading and individual and/or group research projects. Qualified students may study Persian and/or Turkish texts.

ARAB 4960H. Directed Reading and/or Projects (Honors). 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

ARAB 4970H. Directed Reading and/or Projects (Honors). 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

ARAB 4980H. Directed Reading and/or Projects (Honors). 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

ARAB 4990H. Honors Thesis. 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual research in the field of his/her major or in a closely related field.
Non-traditional format: Directed study.

(ARED) Art Education

College of Arts and Sciences, School of Art

ARED 3050. Art and the Child. 3 hours. 6 hours lab per week.
Child creative development including experiences in drawing, painting, graphics, sculpture, and crafts appropriate to children. (May not be used for credit by art education majors.)

ARED 3350. Basic Curriculum in Art Education. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Planning and developing procedures for implementing curriculum at the elementary level. An investigation into the literature, materials, and procedures appropriate to children of different ages, including studio experiences.

ARED 3360. Teaching Procedures in Art Education. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Planning and implementing art instruction for middle and secondary students. Specific teaching procedures, materials, and techniques developed from Art Education philosophy, research, and studio practices.

ARED 3450. School Practicum in Art Education. 1-2 hours. Repeatable for maximum 2 hours credit.
School practicum in Art Education.
Non-traditional format: By arrangement of student.

ARED 4010/6010. Techniques of Art Appreciation and Criticism. 3 hours.
Analyzing, interpreting, and evaluating art; the construction of art appreciation curricula; critical methodology as employed in classroom teaching strategies.

ARED 4340/6340. Art for the Exceptional Child. 3 hours.
Nature, identification, and treatment of children's disabilities through art. Emphasizes the role of art for emotional, social, educational, and vocational adjustment of gifted or disabled students.

ARED 5130/7130. Studio Techniques for Art Education. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Use of tools, materials, and processes in adapting the studio arts for children at various age levels and in integrating studio with a total art program.

ARED 5230/7230. Special Problems in Art Education I. 3 hours.
Prerequisite: Permission of department.
Specific problem areas, according to individual needs, are investigated, discussed, and evaluated.
Non-traditional format: Directed study.

ARED 5240/7240. Special Problems in Art Education II. 3 hours.
Prerequisite: Permission of department.
Specific problem areas with adult populations, e.g., prisoners and the aged, are investigated, discussed, and evaluated.
Non-traditional format: Directed study.

ARED 5250/7250. Special Problems in Art Education III. 3 hours.
Prerequisite: Permission of department.
Specific problem areas in mental health facilities are investigated, discussed, and evaluated.
Non-traditional format: Directed study.

ARED 5260/7260. Special Problems in Art Education IV. 3 hours.
Prerequisite: Permission of department.
Specific problem areas with handicapped children are investigated, discussed, and evaluated.
Non-traditional format: Directed study.

ARED 5270/7270. Special Problems in Art Education V. 3 hours.
Prerequisite: Permission of department.
Specific problem areas in community recreation and cultural centers and museums are investigated, discussed, and evaluated.
Non-traditional format: Directed study.

ARED 5310/7310. Multicultural and Cross-Cultural Study in Art Education. 3 hours.
Prerequisite: Permission of department.
Various cultural traditions in the United States with emphasis on multicultural and cross-cultural art education curricula.

ARED 5350/7350. Teaching of Art in the Elementary School. 3 hours.
Prerequisite: Permission of department.
Recommended practices in qualitative curriculum planning; laboratory experiments that identify philosophical, motivational, and evaluative problems in elementary school art.

ARED 5360/7360. Teaching of Art in the Secondary School. 3 hours.
Prerequisite: Permission of department.
Recommended practice in qualitative curriculum planning, together with laboratory projects that identify philosophical, motivational, and evaluative problems in secondary school art.

ARED 5460/7460. Student Teaching in Art Education. 9 hours.
Prerequisite: Permission of department.
Corequisite: ARED 5470/7470.
Supervised internship in teaching art.
Non-traditional format: Visits by college supervisor and seminars by arrangement.

ARED 5470/7470. Issues and Practices in Teaching Art. 3 hours.
Corequisite: ARED 5460/7460.
Varied approaches to art issues; practices relevant to art education. Must be taken during student teaching.

ARED 5500/7500. Approaches to Art in the Museum. 3 hours.
Prerequisite: Permission of department.
History and current practices in museum education. Emphasis on approaches to aesthetics and art criticism in the museum environment.

(ARGD) Art Graphic Design

College of Arts and Sciences, School of Art

ARGD 3010. Design Drawing Techniques. 3 hours. 6 hours lab per week.
Basic technical and perspective drawing, leading into felt marker illustration.

ARGD 3020. Electronic Design. 3 hours. 3 hours lecture and 3 hours lab per week.
The Macintosh system and utilities with emphasis on page layout and illustration programs.

ARGD 3030. Typography. 3 hours. 6 hours lab per week.
Principles of lettering, letter construction, and basic typography in relation to visual communication. Experience in lettering as it is used and reproduced today is a major component of this course.

ARGD 3040. Concepts in Design. 3 hours. 6 hours lab per week.
Development of techniques to improve formulation of ideas and creative skills in design.

ARGD 3050. Illustration. 3 hours. 6 hours lab per week.
Stresses the importance of technique in a variety of media as the basis for solving design problems.

ARGD 3060. Layout. 3 hours. 6 hours lab per week.
Beginning design of page layout for printed materials using symmetry and asymmetry to create compositions with type and image.

ARGD 3070. The History of Graphic Design. 3 hours.
A comprehensive history of graphic design from antiquity until the present.

ARGD 3080. Internship in Graphic Design. 3 hours.
Entry-level experience working in commercial design office or advertising agencies.
Non-traditional format: Internship.

ARGD 3310. Fundamentals of Scientific Illustration. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Scientific illustration and experience with the commonly used media, including pencil, ink, scratchboard,

and carbon dust. Portfolio development and common business practices are important components of this course.

ARGD 3320. Intermediate Scientific Illustration. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
A continuation of Fundamentals of Scientific Illustration but introducing plate layout and design, working from a publisher's specifications, the production of illustrations for portfolio, and contract negotiations.

ARGD 3330. Advanced Color for Scientific Illustration. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Development of skills in color illustration using multiple techniques and for multiple audiences. An introduction into editorial, conceptual, and commercial design. Techniques include digital software Adobe Photoshop, Illustrator and Macromedia freehand, watercolor, airbrush, gouache, and color pencil. Subjects will include natural and medical science.

ARGD 3340. Art Graphic Design Directed Study in Scientific Illustration. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Materials and methods used for scientific illustration in color and for the production of illustrations of professional caliber on specific subjects (entomology, archeology, etc.) for inclusion in a portfolio.

ARGD 4010. Graphic Design Reproduction. 3 hours. 6 hours lab per week.
A series of projects to acquaint students with the advantages and limitations of current printing technologies.

ARGD 4020. Environmental Graphic Design. 3 hours. 6 hours lab per week.
The design of graphic elements in the built and natural environment including informational signs and symbols, client identity, exhibit design and ornamentation systems.

ARGD 4030. Advanced Typography. 3 hours. 6 hours lab per week.
Functional communication utilizing creative manipulation of lettering, typography, images, and technical processes.

ARGD 4040. Advanced Illustration. 3 hours. 6 hours lab per week.
Stresses the development of an individual visual style through in-depth exploration of a selected technique.

ARGD 4050. Calligraphy. 3 hours. 6 hours lab per week.
Use of the fifteenth-century Humanist Hand and its italic variant, the Chancery Hand, and the familiarity with other historical calligraphic hands.

ARGD 4060. Advanced Layout. 3 hours. 6 hours lab per week.
Comprehensive design projects in book design, posters, and other printed material.

ARGD 4070. Three-Dimensional Graphic Design. 3 hours. 6 hours lab per week.
Comprehensive structural and graphic development of three-dimensional, promotional objects such as pop-ups, packaging, and displays.

ARGD 4080. Special Problems in Graphic Design. 1-3 hours. Repeatable for maximum 9 hours credit. 2-6 hours lab per week.
Prerequisite: Permission of department.
Advanced research in graphic design media and techniques with application to a comprehensive project in visual communication.

ARGD 4090. Advanced Electronic Design. 3 hours. 6 hours lab per week.
Use of desk-top computer for image editing and related applications.

ARGD 4100. Graphic Design Business and Promotion. 3 hours. 6 hours lab per week.
Business practices in graphic design, including portfolio formats, personal promotion, resumes, contracts, and professional ethics.

ARGD 4110. Portfolio Project. 3 hours. 6 hours lab per week.
A capstone course developing a comprehensive project of choice.

(ARHI) Art History

College of Arts and Sciences, School of Art

ARHI 2100. Monuments of World Art. 3 hours.
A chronological survey of major monuments of world art.

ARHI 2110H. Monuments of World Art (Honors). 3 hours.
Not open to students with credit in ARHI 2100.
Prerequisite: Permission of Honors.
A chronological survey of major monuments of world art.

ARHI 2111H. Introduction to Art History (Honors). 3 hours.
Not open to students with credit in ARHI 2100.
Prerequisite: Permission of Honors.
Methodological strategies for the study of the

history of art through concentration on the art of a particular era.

ARHI 3000. Ancient Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
Major monuments of art from the ancient world from the Paleolithic era through the Roman Empire.

ARHI 3005. Processes and Principles: Italian Art and Architecture in Italy. 3 hours.
Prerequisite: ARHI 2100 or permission of department.
Through lectures and site visits, students will consider the materials, methods, and meaning of Italian art. Each semester a series of important monuments of painting, sculpture, and architecture will be studied both as significant examples of trends in the history of art and as demonstrations of the various techniques employed.

ARHI 3006. Topics in Italian Art. 3 hours.
Prerequisite: ARHI 3005.
A guided independent study, open to those students who have successfully completed "Processes and Principles: Italian Art and Architecture in Italy" in Cortona, Italy. Working with the art history instructor, the student will expand one of the topics he/she first considered in "Processes and Principles: Italian Art and Architecture in Italy."
Non-traditional format: Directed Study.

ARHI 3010. Medieval Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
European art from the fourth century through the fourteenth century with an emphasis on the impact of Christianity on Europe's classical Roman and non-classical heritage.

ARHI 3012. Art and Architecture of Late Antiquity. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
The monuments of art and architecture in the Mediterranean world, both East and West, dating from the third to the sixth century, with emphasis on the continuity between Classical Roman art and the emerging medieval traditions of Byzantium and Western Europe.

ARHI 3020. Renaissance Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
Major monuments, artists, and subjects of art from the late fourteenth through the sixteenth century in Europe.

ARHI 3022. Art and Architecture of Byzantium —The Empire of the New Rome. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
A survey of the art and architecture in the Byzantine world from the sixth to the sixteenth century.

ARHI 3030. Baroque Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
Formal and contextual history of the arts of the Baroque period, roughly from 1590 through 1750 throughout Europe focusing on major developments in Italy, Spain, France, Flanders, and Holland.

ARHI 3040. Asian Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
The arts of India, central and southeast Asia, China, and Japan with emphasis on religions and cultural interchanges in Asian history.

ARHI 3045. Oriental Views and Post Colonial Perceptions. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
An examination of the art of the British Empire with references to rival French, North American, and south Asian powers. Paintings, sculpture, photographs, travelogues, maps, comic books, and films as they relate to notions of colonialism and imperialism, diaspora, and national identity.

ARHI 3050. American Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
Art in the United States from the Colonial period through the Depression of the 1930s. The social, political, and intellectual contexts of American visual culture will be stressed.

ARHI 3055. Eighteenth- and Nineteenth-Century European Art. 3 hours.
Not open to students with credit in ARHI 3060.
Prerequisite: ARHI 2100 and permission of major.
The artistic production in Europe circa 1700-1890. Major styles and movements such as the Rococo, Neoclassicism, Romanticism, Realism, Impressionism, and Symbolism will be examined within their historical context.

ARHI 3065. Modern Art. 3 hours.
Not open to students with credit in ARHI 3060.
Prerequisite: ARHI 2100 and permission of major.
Survey of major artists and movements in Europe from the late nineteenth century to World War II, and subsequent developments in American Art.

ARHI 3070. American Architecture. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
American buildings, their architects, and architectural theory in the continental United States from the seventeenth through the twentieth centuries.

ARHI 3090. Topics in Art History. 3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: ARHI 2100 and permission of major.
The methods and ideas associated with the study of art history: attention will be focused on one or more of a variety of different eras, themes, or issues, e.g., painting in northern Europe from 1400 to 1700, Byzantine art and architecture, post-colonial arts.

ARHI 4000/6000. Early Greek Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Vase painting, sculpture, and architecture from the Geometric through the Archaic periods.

ARHI 4010/6010. Classical and Hellenistic Greek Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Sculpture, architecture, and some vase painting from the Classical and Hellenistic periods emphasizing major monuments, including the Temple of Zeus at Olympia, the Parthenon, and the Great Altar of Zeus and Athena at Pergamon.

ARHI 4020/6020. Roman Art and Architecture. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Buildings and wall painting of Pompeii, Roman Republican portraiture, Imperial portraiture, and major buildings and their associated architectural sculpture located in Rome and other sites within the Empire.

ARHI 4030/6030. Classical Tradition in the Visual Arts. 3 hours.
Prerequisite: ARHI 2100 and permission of major. The influence of classical antiquity on the art and architecture of post-classical eras tracing formal affinities and the myths of classical gods and heroes.

ARHI 4050/6050. Icons in Byzantium: Theory and Practice. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
Various issues of panel painting in the Byzantine Empire. The Byzantines not only mastered the production of such pieces of art but additionally they developed a highly sophisticated theory of images that was unique in the medieval world. This course explores the dynamics between the theory and the practice of creating, displaying, and venerating icons.

ARHI 4060/6060. Image in Space: Mural Painting and Architecture in Byzantium. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The issue of the interdependence of mural painting and architectural space in Byzantine Art.

ARHI 4100/6100. Early Medieval Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Architecture, sculpture, and painting in Western Europe from the seventh through the eleventh centuries.

ARHI 4110/6110. Romanesque Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Architecture, sculpture, and painting in Western Europe of the eleventh and twelfth centuries with particular emphasis on France.

ARHI 4120/6120. Gothic Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Architecture, sculpture, and painting of the twelfth and thirteenth centuries in Europe with special emphasis on France.

ARHI 4130/6130. Late Gothic Art in Italy. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Principal monuments and artists of the thirteenth and fourteenth centuries in Italy emphasizing figures such as Giotto, Duccio, Simone Martini, and Ambrogio Lorenzetti.

ARHI 4200/6200. Early Renaissance in Italy. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Architecture, sculpture, and painting of the fifteenth century focusing on Tuscany, and the emergence and development of the new art principles in Florence represented in the work of such artists as Masaccio, Brunelleschi, Donatello, Alberti, Fra Angelico, Filippo Lippi, Ghirlandaio, Pollaiuolo, and Botticelli.

ARHI 4210/6210. High Renaissance and Mannerism in Italy. 3 hours.
Prerequisite: ARHI 2100 and permission of major. The climactic period of the Renaissance in Italy with special emphasis on such key figures as Leonardo, Michelangelo, Raphael, Protormo, Rosso Fiorentino, and Bronzino.

ARHI 4220/6220. Northern Renaissance. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Painting north of the Alps, primarily in Flanders and Germany from the fourteenth to the sixteenth century, with special attention to the van Eycks, van der Weyden, Bosch, Durer, and Grunewald.

ARHI 4290/6290. Renaissance and Baroque Sculpture. 3 hours.
Prerequisite: ARHI 2100 and permission of major. The development of period styles and an analysis of the role of function and tradition in European sculpture for ca. 1260-1700, with special attention to the work of Donatello, Michelangelo, and Bernini.

ARHI 4300/6300. Italian Baroque Art and Architecture. 3 hours.
Prerequisite: ARHI 2100 and permission of major. Baroque art and architecture in Italy, with special emphasis on Rome, and such important figures as the Carracci, Caravaggio, Bernini, and Borromini.

ARHI 4310/6310. Northern Baroque Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major. French and Dutch art of the seventeenth century with emphasis on such key figures as Rubens, Velasquez, Rembrandt, and Poussin.

ARHI 4350/6350. Art and Architecture of the City of Rome. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

The continuity of an artistic tradition in relation to the history of the seat of the Roman Empire, the Catholic Church, and modern Italy. Attention is given to specific sites, artistic types, and public processions.

ARHI 4400/6400. Romanticism and Neoclassicism. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

European art and architecture from ca. 1760 through 1865 including the sublime, the beautiful, the picturesque, historical revivalism, exoticism, rationalism, and eclecticism.

ARHI 4410/6410. American Art from Colonial Settlement through the Civil War. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

The formation of a national identity and assimilation of European styles in painting, sculpture, and cultural artifacts such as photographs and popular illustrations. Artists include, Copley, Peale, Allston, Cole, Church, Quidor, Mount, Bingham, Heade, Bierstadt, and Homer.

ARHI 4420/6420. American Art of the Fin de Sie'cle 1876-1913. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

The transition in American art from Victorianism to early Modernism in an age of science, progress and decay, tradition and ethnicity, motherhood and the "new woman." A key cultural referent will be the World's Columbian Exposition of 1893.

ARHI 4440/6440. American Modernism 1900-1946. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

The creation of radical forms of artistic expression, and their seeming rejection by the Regionalists in relation to two world wars, the modern city, the depression, and revolutions in space, time, and technology. Special emphasis will be placed on the diverse group of artists mentored by Alfred Stieglitz.

ARHI 4490/6490. Rococo to Reform: European Art 1700-1760. 3 hours.

Undergraduate prerequisite: ARHI 2100 and permission of major.

Art in Europe between 1700-1760, with emphasis on the new Rococo style and later call for "reform," that reflected new aesthetic attitudes and political environment. Other topics covered are the Grand Tour, "re-discovery" of antiquity, emergence of art history and criticism, and rise of "lower" genres.

ARHI 4500/6500. Realism and Impressionism. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

The rise and development of naturalism in mid-nineteenth-century art in Europe.

ARHI 4510/6510. Modern Art in Europe from 1886 to 1918. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

Painting and sculpture from Post-Impressionism to the end of World War I, the Cubo-Futurist revolution and approaches to expressionism and abstraction.

ARHI 4520/6520. Spirituality in Modern Art. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

Myth and spirituality in the abstract art of the late nineteenth and twentieth centuries, as exemplified in Gauguin, Kandinsky, Klee, Brancusi, Pollock, and Rothko, among others.

ARHI 4530/6530. Nineteenth-Century Photography. 3 hours.

Undergraduate prerequisite: ARHI 2100 and permission of major.

Forms, functions, and meanings of photographic production in Europe and America during the 1800s. Issues to be addressed are: the nature of the medium, its relationship to "reality," its various techniques and technology, its role in art and science, and its publics and patronage.

ARHI 4540/6540. European Art Between the Great Wars. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

High modernism in the twentieth century. Topics include Dada, Constructivism, Surrealism, the Bauhaus, and other major trends between the two World Wars.

ARHI 4550/6550. Art From 1940 to 1968. 3 hours.

Undergraduate prerequisite: ARHI 2100 and permission of major.

Major artists and movements from the onset of World War II to the late 1960's in Europe and America.

ARHI 4560/6560. Art From 1968 to the Present. 3 hours.

Undergraduate prerequisite: ARHI 2100 and permission of major.

Post-studio practices, stategies of appropriation, art-as-critique, and pluralism in the late twentieth century.

ARHI 4600/6600. Art of India. 3 hours.

Prerequisite: ARHI 2100 and permission of major.

Traditional art of India from the Indus valley civilization to the Muslim conquest. Major monuments of architecture, sculpture, and painting are investigated in the context of political and religious developments in the Indian subcontinent, including influences of the Indic religions of Buddhism, Hinduism, and Jainism.

ARHI 4610/6610. Arts of China. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
Major trends in the arts of China from the Neolithic age to the eve of the modern period, ca. 2500 BCE to the nineteenth century CE. Factors affecting important developments in style and subject matter will be studied in the context of contemporary cultural phenomena.

ARHI 4620/6620. Japanese Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
History of Japanese art of the proto-historic period to the exposure of Japan to the West in the mid-nineteenth century. The Buddhist arts of Japan during the imperial period, the evolution of Japanese pictorial art, religious and secular architecture, and Shinto-influenced arts.

ARHI 4650/6650. Voyages and Visionaries: From Columbus to Picard. 3 hours.
Undergraduate prerequisite: ARHI 2100 and permission of major.
The visual history of travel related to the building of empires from 1400 until today. Historical and fictitious travelers will be explored with reference to maps, travelogues, paintings, sculpture, photographs, and cinema. Field trips to the Hargrett Map Collection and the Georgia Museum of Art.

ARHI 4700/6700. Guided Foreign Study. 3 hours.
Prerequisite: Permission of major.
Travel to selected works in foreign collections, and sites. Local library, archival resources used. Preparatory and on-site lecture and discussion.

ARHI 4710/6710. Guided Foreign Study. 3 hours.
Prerequisite: ARHI 4700/6700.
Various topics related to Italian art.

ARHI 4800. Senior Seminar: Methods of Art History. 3 hours.
Prerequisite: ARHI 2100 and 15 hours of ARHI courses and permission of major.
This topic-centered course provides a foundation for understanding various methods of interpreting art ranging from connoisseurship to iconography, Marxism, and feminism. It addresses the theory, contributions, and oversights of each method as well as how research is accomplished, what sources are used, and how they are interpreted and applied.

ARHI 4900/6900. Topics in Ancient and Medieval Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
Particular topics in Ancient and Medieval art and architecture treated in depth.

ARHI 4910/6910. Topics in Renaissance and Baroque Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
Particular topics in Renaissance and Baroque art and architecture treated in depth.

ARHI 4920/6920. Topics in Modern Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
Particular topics in modern art and architecture from Europe or America treated in depth.

ARHI 4930/6930. Topics in Asian or Non-Western Art. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
Particular topics in Asian and non-western art and architecture treated in depth.

ARHI 4940/6940. Gender Issues and Art History. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
The impact of feminist theory and gay and lesbian studies on recent art historical scholarship.

ARHI 4950/6950. Independent Study. 3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Special projects in fields in which the student has demonstrated the ability to conduct research and write a fully and correctly annotated paper.

ARHI 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Special projects under the direction of an approved advisor for Honors students of senior division standing.
Non-traditional format: Directed study.

ARHI 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Special projects under the direction of an approved advisor for Honors students of senior division standing.
Non-traditional format: Directed study.

ARHI 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Special projects under the direction of an approved advisor for Honors students of senior division standing.
Non-traditional format: Directed study.

ARHI 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field or in a closely related field.
Non-traditional format: Students will meet with faculty members on a regular basis.

ARHI 4995. Art History Museum Internship. 3 hours. 6 hours lab per week.
Not open to students with credit in ARST 4930.
Prerequisite: Permission of major.
Students will work with the professional staff at the Georgia Museum of Art on exhibitions, cataloguing, researching, and other related projects associated with the ongoing activities at the museum. A schedule of the assignments and a written summary of their work will be required.

(ARID) Art Interior Design

College of Arts and Sciences, School of Art

ARID 1010. Introduction to Interior Design. 2 hours. 1 hour lecture and 1 hour lab per week.
Principles of design in relation to the human environment in interior design and related fields. The profession of interior design is introduced in its organization and practice.

ARID 2000. Drawing for Interior Design. 3 hours. 6 hours lab per week.
Prerequisite: ARST 1050.
Standard conventions in drawing, including projection of plans, elevations, sections, oblique, axonometric, and one- and two-point perspective drawings. Attention is given to the development of technical skills with appropriate media as well as interior design and presentation.

ARID 2010. Rendering for Interior Design. 3 hours. 6 hours lab per week.
Prerequisite: ARID 2000.
Color, free-hand sketching techniques, layout, and composition in two-dimensional projects relating to the process of interior design.

ARID 2110. Studio I: Single Family Residential Design. 3 hours. 6 hours lab per week.
Prerequisite: ARID 2000.
Symbolic language of interior design, measuring and scaling interior spaces and furnishings, and the application of principles of design for a single-family residence.

ARID 3110. Studio II: Documenting Interior Design Projects. 3 hours. 6 hours lab per week.
Prerequisite: ARID 2010 and ARID 2110 and permission of major.
All design phases in the development of a comprehensive interior design project from programming through contract documents. Development of skills in creating working drawings and oral presentations.

ARID 3120. Studio III: Space Programming and Office Design. 4 hours. 8 hours lab per week.
Prerequisite: ARID 3110 and ARID 3210 and ARID 3310 and ARID 3410
Office design with emphasis on defining the needs and values of the user, the client, and society, and their interrelationships. Initiation of project goals and viable design concepts.

ARID 3130. Studio IV: Design for Special Populations. 4 hours. 8 hours lab per week.
Prerequisite: ARID 3120 and permission of major.
Development and presentation of a studio design project for people with varying special needs. Projection of documents of advanced complexity, application of specialized knowledge from prerequisite courses, and familiarity with relevant codes, standards, and guidelines.

ARID 3210. History of the Decorative Arts I. 3 hours.
Prerequisite: ARHI 2100 and permission of major.
A historical survey of architecture; concepts of interior space, furniture, and allied crafts as a background for contemporary design.

ARID 3220. History of the Decorative Arts II. 3 hours.
Prerequisite: ARHI 2100.
Decorative arts of Europe and America beginning with the Arts and Crafts Movement of the nineteenth century and continuing through the twentieth century.

ARID 3310. Building Systems. 3 hours. 6 hours lab per week.
Prerequisite: ARID 2010 and ARID 2110 and permission of major.
Standard building systems, such as acoustical, electrical, plumbing, heating, and air-conditioning, as they relate to the built environment and affect decisions in interior design.

ARID 3320. Interior Finishes and Materials. 3 hours. 3 hours lecture and 1 hour lab per week.
Prerequisite: ARID 3110 and ARID 3210 and ARID 3310 and ARID 3410.
Materials and finishes in interior design; factors affecting their selection and specification, and their incorporation into contract documents.

ARID 3330. Lighting for Interior Design. 3 hours. 6 hours lab per week.
Prerequisite: ARID 3120 and ARID 3220 and ARID 3320 and ARID 3420 and permission of major.
Technical and behavioral factors affecting lighting design. Special emphasis on calculations, selection, and specification.

ARID 3340. Furniture Design. 3 hours. 6 hours lab per week.
Prerequisite: ARID 3120 and ARID 3220 and ARID 3320 and ARID 3420 and permission of major.

Cabinetry and furniture design, including construction methods, drawings, and design presentation.

ARID 3410. Computer-Aided Design for Interiors. 3 hours. 6 hours lab per week.
Prerequisite: ARID 2010 and ARID 2110 and permission of major.
The creation of two- and three-dimensional drawings using computer aided design.

ARID 3420. Computer-Based Business/Professional Application. 3 hours. 6 hours lab per week.
Prerequisite: ARID 3410.
Computer-based design project management utilizing appropriate software for CAD, desktop publishing, spread sheets, databases, and presentations.

ARID 4010. Interior Design Internship. 3 hours.
Prerequisite: ARID 3130.
Minimum of four hundred hours working in an approved interior design- related firm. Requirements include portfolio preparation, job interviews, and selection of position one term before registration. Responsibility for finding position rests with student.
Non-traditional format: On-the-job learning at internship in field.

ARID 4110. Studio V: Large-Scale, Non-Residential Design. 4 hours. 8 hours lab per week.
Prerequisite: ARID 3130.
Completion of project from programming to final presentation of non-residential, multi-purpose design of advanced complexity.

ARID 4150/6150. Special Topics in Interior Design. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ARID 3110 and ARID 3310 and ARID 3410 and permission of major.
Special topics for advanced students with a formal written and/or graphic presentation of the results.
Non-traditional format: Only to be taken by students who have indicated that they can handle directed studies responsibility.

ARID 4350/6350. Interior Design Practicum. 1-3 hours.
Prerequisite: ARID 3110 and ARID 3310 and ARID 3410 and permission of major.
Individualized projects arranged with clients to explore various aspects of the interior design profession.
Non-traditional format: Only to be taken by students who have indicated that they can handle directed studies responsibility.

ARID 4610. Senior Treatise I. 2 hours. 2 hours lab per week.
Prerequisite: ARID 4010.
Systematic design methodology in the preparation of a written prospectus of advanced complexity and scope in an area of specialization within the broader field of interior design.

ARID 4620. Senior Treatise II. 5 hours.
Prerequisite: ARID 4610 and permission of major.
Development and completion of the design project defined by the prospectus from Senior Treatise I. The course culminates in the oral and graphic presentation of the research findings and respondent design proposals.

(ARST) Studio Art

College of Arts and Sciences, School of Art

ARST 1040. Proseminar in Studio Art. 1 hour.
The profession of artist and fields of concentration in studio art.

ARST 1050. Drawing I. 3 hours. 6 hours lab per week.
The techniques, materials, and principles of drawing.

ARST 1060. Color/Composition. 3 hours. 6 hours lab per week.
Color emphasizing and its role in composition and two-dimensional design.

ARST 1070. Drawing II. 3 hours. 6 hours lab per week.
Prerequisite: ARST 1050.
A continuation of Drawing I with an emphasis on figure drawing.

ARST 1080. Three-Dimensional Design. 3 hours. 6 hours lab per week.
Three-dimensional forms and space using various materials and methods.

ARST 2010. Intermediate Drawing. 3 hours. 6 hours lab per week.
Prerequisite: ARST 1070.
Varied approaches to drawing incorporating experience with still life, landscape, models, composition, analytical, and expressive drawing, and the use of basic drawing media.

ARST 2100. Introductory Painting. 3 hours. 6 hours lab per week.
Prerequisite: ARST 1060 and ARST 1070.
Fundamentals of painting related to subject matter, composition, and color. Preparation of supports and grounds, and knowledge of basic painting materials will be stressed.

ARST 2110. Intermediate Painting. 3 hours. 6 hours lab per week.

Prerequisite: ARST 2100.

Painting applied to still life, landscape, abstraction, and the human figure from live models.

ARST 2200. Introductory Photography. 3 hours. 6 hours lab per week.

Prerequisite: ARST 1070.

The art of photography, its history and criticism, including basic processing techniques and optical principles using standard cameras and black and white materials. Picture making concepts and interpretation are emphasized.

ARST 2300. Printmaking: Relief Processes I. 3 hours. 6 hours lab per week.

Prerequisite: ARST 1070.

Various relief printmaking techniques with concentrated work in the processes of woodcut, wood engraving, and linoleum cut.

ARST 2310. Printmaking: Intaglio I. 3 hours. 6 hours lab per week.

Prerequisite: ARST 1070.

Various printmaking techniques with concentrated work on intaglio.

ARST 2400. Fundamentals of Sculpture. 3 hours. 6 hours lab per week.

Prerequisite: ARST 1070 and ARST 1080.

Technical fundamentals of carving, modelling, and constructive methods of sculpture and their aesthetic implications in terms of form and content.

ARST 2410. Portrait and Figure Sculpture. 3 hours. 6 hours lab per week.

Prerequisite: ARST 1070 and ARST 1080.

Sculpting the human form directly from the model.

ARST 2500. Introduction to Ceramics. 3 hours. 6 hours lab per week.

Prerequisite: ARST 1070.

Development of personal expression using the ceramic process.

ARST 2600. Jewelry and Metalwork. 3 hours. 6 hours lab per week.

Prerequisite: ARST 1070 and ARST 1080.

Fundamental techniques of forming, casting, fabrication, and finishing metals such as sterling, gold, copper, and iron.

ARST 2700. Fundamentals of Fabric Structure. 3 hours. 6 hours lab per week.

Prerequisite: ARST 1070.

Woven and non-woven fabric structure and the relation between process and material.

ARST 2710. Fundamentals of Fabric Decoration. 3 hours. 6 hours lab per week.

Prerequisite: ARST 1070.

Fabric decoration utilizing dyes and pigments.

ARST 3000. Introduction to Figure Drawing. 3 hours. 6 hours lab per week.

Prerequisite: ARST 2010.

Compositional, expressive, and anatomical approaches to drawing the human figure, traditional media such as charcoal, conte crayon, graphite, and ink will be used.

ARST 3010. Advanced Drawing. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.

Prerequisite: ARST 2010.

Advanced drawing stressing individual projects and experimental approaches.

ARST 3110. Transparent Watercolor. 3 hours. 6 hours lab per week.

Prerequisite: ARST 2100 or permission of department.

Transparent watercolor including landscape, still life, and the human figure. Personal imagery and non-representational painting will also be explored.

ARST 3120. Aqueous Media. 3 hours. 6 hours lab per week.

Prerequisite: ARST 2110.

Synthetic media (acrylics), casein, and water media other than transparent watercolor.

ARST 3130. Figure Painting. 3 hours. 6 hours lab per week.

Prerequisite: ARST 2110 and ARST 3000.

Compositional, expressive, and anatomical aspects of painting the human figure; work from the model, both nude and clothed, and other sources.

ARST 3140. Painting Studio. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.

Prerequisite: ARST 2110.

Inquiry into varied approaches in painting, both representational and non-representational. Experimental attitudes and personal ideas and solutions are encouraged.

ARST 3150. Figure Painting. 3 hours. 6 hours lab per week.

Prerequisite: ARST 3140.

Painting the human figure emphasizing structure and painting techniques. Media include oil and acrylic paints and grounds.

ARST 3160. Painting Materials and Techniques. 3 hours. 6 hours lab per week.

Prerequisite: ARST 2110.

Historical techniques such as egg tempera, fresco, encaustic, and Venetian mode oil painting as they apply to contemporary needs; modern materials such as alkyd and polymer resins are introduced. Consideration is given to the properties of pigments, binders, grounds, and supports.

ARST 3200. Intermediate Photography. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: ARST 2200.
Camera skills and processing techniques for black and white negatives and prints with emphasis on visual concepts and articulation of ideas.

ARST 3210. Color Photography. 3 hours.6 hours lab per week.
Prerequisite: ARST 3200.
Color photography including color theory, color temperature, lighting, and color printing. Concepts are presented in the context of contemporary trends and practices.

ARST 3220. Medium and Large Format. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3200.
Medium and large format cameras using roll, pack, and sheet films. Techniques of advanced camera handling, lighting, film processing, and refined printing. Historical and contemporary practices considered.

ARST 3230. Internship in Photography. 2-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: ARST 2200.
Practical experience with professionals including photographers, designers, and computer specialists. Independent projects and research with editors, curators, teachers, and historians. Assist photography faculty in creative work with emphasis on studio and lab production.
Non-traditional format: Internship.

ARST 3300. Printmaking: Lithography I. 3 hours. 6 hours lab per week.
Prerequisite: ARST 1070.
Various printmaking techniques with concentrated work on lithography.

ARST 3310. Book Art/Papermaking I. 3 hours. 6 hours lab per week.
Prerequisite: ARST 1070.
Hand papermaking as a support for other media and as a creative medium in two or three dimensions.

ARST 3320. Book Art/Letterpress I. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2300 or ARST 2310.
Letterpress printing and book arts as they relate to the creative synthesis of text and image in book and broadside form.

ARST 3340. Printmaking: Relief Processes II. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2300.
Relief for advanced students stressing their aesthetic development.

ARST 3350. Printmaking: Intaglio II. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2310.
Intaglio for advanced students stressing their aesthetic development.

ARST 3360. Printmaking: Lithography II. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3300.
Lithography for advanced students stressing aesthetic development.

ARST 3370. Book Art/Papermaking II. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3310.
The book as an art form, its structure including various binding techniques in relation to its content.

ARST 3380. Printmaking: Book Art/Letterpress II. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3320.
Special letterpress project for advanced students stressing their aesthetic development with further technical instruction.

ARST 3400. Sculpture: Construction in Metal. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2400.
Beginning welding techniques and the use of metal in sculptural composition.

ARST 3410. Intermediate Construction in Metal. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3400.
Advanced welding techniques and the use of mixed media.

ARST 3420. Sculpture: The Subtractive Process. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2400 or ARST 2410.
Direct carving in wood or stone.

ARST 3430. Carving Wood and Stone. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2400 or ARST 2410.
Carving wood and stone, both representational and non-representational, with emphasis on aesthetic development.

ARST 3440. Fundamentals of Casting Metal Sculpture. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2400 or ARST 2410.
Fundamental techniques for producing metal sculpture using refractory molds and sand casting.

ARST 3450. Intermediate Casting in Metal. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3440.
Production of sculpture in refractory molds and sand casting, both representational and non-representational, with emphasis on aesthetic development.

ARST 3460. Intermediate Portrait and Figure Sculpture. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2410.
Sculpting the human form based on the live model. Anatomy, composition, and sculptural techniques are emphasized as means for creative expression.

ARST 3500. Intermediate Ceramics. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.
Prerequisite: ARST 2500.
Sculptural and functional ceramic forms with an emphasis on personal expression and individual style.

ARST 3590. Ceramics-Technical. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: ARST 2500.
Exploration of the technical aspects of the ceramic process.

ARST 3610. Jewelry. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: ARST 2600.
Traditional and contemporary forms, materials, ornament, adornment, and techniques of surface enrichment.

ARST 3620. Metalwork. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: ARST 2600.
Forging, raising, and surface enrichment as applied to hollow ware, flatware, and architectural ornaments.

ARST 3700. On-Loom Weaving. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2700.
Utilization of the floor loom to study basic weaves and their application to hand-crafted and industrial textiles.

ARST 3710. Advanced Weaving. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2700.
Woven structures on multi-harness looms.

ARST 3720. Basics of Non-Woven Fabrics. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2700.
Construction techniques of non-woven fabrics and their creative applications.

ARST 3730. Silkscreen Processes. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2710.
Utilization of the silkscreen for fabric printing, including simple stencils and photographic processes.

ARST 3750. History of Fabric Design. 3 hours. 6 hours lab per week.
The development of the fabric arts from prehistoric periods to the present in conjunction with studio projects.

ARST 3760. Japanese Fabrics. 3-9 hours. Repeatable for maximum 9 hours credit. 6-18 hours lab per week.
Prerequisite: ARST 1070.
Japanese fabrics in a historical and cultural context and their application to contemporary fiber art in conjunction with studio projects.

ARST 3770. Peruvian Fabrics. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2700 and ARST 2710.
Peruvian fabrics in historical and cultural context and their application to contemporary fiber art in conjunction with studio projects.

ARST 3780. Fabric Manipulation and Embellishment. 3 hours. 6 hours lab per week.
Prerequisite: ARST 1070 and ARST 1080.
Fabric manipulation and embellishment, including technical processes such as shibori (tie dye), layering and piecing of fabrics, surface embellishment, dyeing, and other processes that are not covered in the introduction courses and that are processes not needing horizontal production space.

ARST 3800. The Computer in Art. 3 hours. 6 hours lab per week.
Prerequisite: ARST 1070.
The computer as an aid in designing personal creative work for a variety of careers in art.

ARST 4000. Directed Study in Drawing. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: ARST 3010 or permission of department.
Independent projects for advanced drawing and painting majors.

ARST 4020. Figure Drawing/Anatomy. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: ARST 3000.
Figure drawing with consideration of the human skeletal and muscular systems, surface anatomy, and bio-mechanical concerns.

ARST 4090. Senior Exit in Drawing. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3010 and ARST 4020.
Projects in drawing towards the presentation of a BFA exhibition. The course includes preparation for professional activity and/or application to graduate school, and should be taken during last semester of studio course work.

ARST 4100. Directed Study in Painting. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: Nine hours of ARST 3010 or ARST 3120 or ARST 3130 or ARST 3150 or ARST 3160.
Advanced independent study for drawing and painting majors. Studio meetings arranged.

ARST 4110. Senior Exit in Painting. 3 hours. 6 hours lab per week.
Prerequisite: Nine hours of ARST 3010 or ARST 3120 or ARST 3130 or ARST 3150 or ARST 3160.
Projects in painting towards the presentation of a BFA exhibition. The course includes preparation for professional activity and/or application to graduate school, and should be taken during last quarter of studio course work.

ARST 4200. Advanced Photography. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3210 and ARST 3220.
Advanced applications of the medium. Experimental camera handling and laboratory work is emphasized. Intensive practice of traditional and new technologies from the photogram to the electronic image.

ARST 4210. Special Topics in Photography. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3210 and ARST 3220.
Major historical movements in photography including comparative studies of contemporary trends and criticism with an emphasis on research and the development of library archives.

ARST 4220. Senior Exhibition and Portfolio. 3 hours. 6 hours lab per week.
Prerequisite: ARST 4200.
Creation and presentation of a finished body of original work in photography for BFA degree, with a written statement concerning the work.

ARST 4300. Printmaking: Internship. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Practical experiences with related professions in the field of print, paper and book collections, and print shops; work with printmaking faculty in the studio or print facility.
Non-traditional format: Internship.

ARST 4310. Senior Exit in Printmaking. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Individual research, creation, and presentation of a finished body of original work in printmaking for senior exhibition or portfolio with written statement and visual documentation.

ARST 4330/6330. Printmaking: Special Topics I. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Not open to students with credit in ARST 3330.
Prerequisite: ARST 2310 and ARST 3300 and ARST 3310 and ARST 3320.
Special projects for advanced students.

ARST 4340/6340. Special Topics II: Printmaking. 3 hours. 6 hours lab per week.
Not open to students with credit in ARST 3390.
Prerequisite: ARST 4330/6330.
Special topics for advanced students stressing aesthetic development with further technical instruction.

ARST 4400. Advanced Casting in Metal. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3450.
Refinement of technical and expressive skills in producing cast metal sculpture.

ARST 4410. Advanced Portrait and Figure Sculpture. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3460.
Refinement of technical and expressive skills in sculpting the human form.

ARST 4420. Sculpture and Spatial Context. 3 hours. 6 hours lab per week.
Production of a fully realized three-dimensional maquette or full scale sculpture beginning with drawing of objects, landscape, architecture, and the human figure.

ARST 4430. Advanced Stone Carving. 3 hours. 6 hours lab per week.
Refinement of technical and expressive skills in carving stone.

ARST 4440. Advanced Construction in Metal. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3410.
Refinement of technical and expressive skills in construction in metal.

ARST 4450. Senior Exit in Sculpture. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Directed independent study towards the presentation of a BFA exhibition, including preparation for professional activity and/or application to graduate school.

ARST 4500. Advanced Ceramics. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.
Prerequisite: Nine hours of ARST 3500.
Specific projects for experienced students selected in consultation with the instructor.

ARST 4590. Senior Exit Show in Ceramics. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Nine hours of ARST 4500.
Independent study directed towards the presentation of a BFA exhibition, including preparation for a career and/or application to graduate school.

ARST 4600. Jewelry. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: ARST 3610 and ARST 3620.
Advanced design and fabrication of jewelry emphasizing individual research.

ARST 4610. Advanced Metalwork. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: ARST 3610 and ARST 3620.
Advanced design, forming, and embellishment of metals emphasizing individual research.

ARST 4620. BFA Project in Jewelry or Metalwork. 3 hours. 6 hours lab per week.
Prerequisite: ARST 3610 and ARST 3620.
Directed independent study towards the presentation of a BFA exhibition including preparation for professional activity and/or application to graduate school.

ARST 4700. Advanced Decoration. 3 hours. 6 hours lab per week.
Prerequisite: ARST 2710.
Development of a professional portfolio for careers in the textile industry.

ARST 4710. BFA Project in Fabric Design. 3 hours. Repeatable for maximum 12 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
Directed independent study towards the presentation of a BFA exhibition, including preparation for professional activity and/or application to graduate school.

ARST 4730/6730. Fabric Design in Japan. 3 hours. 6 hours lab per week.
Prerequisite: Permission of major.
Study program in Japan incorporating intensive studio work and field trips to collections and sites.

ARST 4800/6800. Special Topics in Computer Art. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: Permission of major.
Computer-generated art and design including advanced computer generated imaging, computer aided drafting, scanned image manipulation, animation, desktop publishing and presentation, and two-dimensional and three-dimensional representation of fiber and sculpture arts.

ARST 4810/6810. Three-Dimensional Computer Art. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: ARST 4800/6800 and permission of major.
Three-dimensional, computer-generated art using modelling, rendering, animation, and output technique.

ARST 4820/6820. Computer Aided Design. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: ARST 4800/6800.
Contemporary concepts and trends in art computing. The development and presentation of a substantial body of individual imagery is a major aspect of the course.

ARST 4900. Technical Problems. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
For students qualified to carry out individual projects in studio areas.

ARST 4910/6910. Aspects of Folk Culture. 3 hours.
Art of folk, self-taught, and visionary artists as distinct from mainstream and academic traditions.

ARST 4930. Internship in Art. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Supervised experience in a professional environment such as cooperative programs, agencies, or artists' studios.
Non-traditional format: The equivalent of lecture or studio course amounting to three credit hours to be agreed upon by the outside agency and the School of Art.

(ARTI) Artificial Intelligence

College of Arts and Sciences

(ARTI)EPSY(PSYC) 3020. Introduction to Cognitive Science. 3 hours.
Prerequisite: PSYC 1101 or PHIL 1000 or EPSY 2020.
Interdisciplinary study of mind and intelligent activity that forms cognitive sciences. Contributions of psychology, philosophy, linguistics, biology, anthropology, computer science, and education toward uncovering important aspects of the mind and intelligent activity are discussed.

(ARTI)CSCI 4540/6540. Symbolic Programming. 3 hours.
Prerequisite: CSCI 1302 or permission of department.
Prerequisite or corequisite: CSCI(PHIL) 4550/6550.

Programming in LISP and PROLOG, with emphasis on artificial intelligence techniques. Other languages used for artificial intelligence work will be presented more briefly.

ARTI 4950. Directed Readings in Cognitive Science. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Reading and independent research on a specified topic beyond normal course offerings and closely supervised by the instructor. Application should be made in advance of registration to the Artificial Intelligence Center Director. Open only to students prepared to pursue advanced material.
Non-traditional format: Directed study.

ARTI 4960H. Directed Reading and/or Projects (Honors). 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

ARTI 5007. Internship in Artificial Intelligence Business/Industry. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Internship in a professional setting allowing the student to integrate his/her educational experience with real-world situations in software development, database technology, hardware design, networks, or any artificial intelligence-related field.
Non-traditional format: Supervised occupational experience in business and industry.

(ARTS) Art

College of Arts and Sciences, School of Art

ARTS 2000. Art Appreciation. 3 hours.
Understanding painting, sculpture, architecture, and design to enhance aesthetic appreciation.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ARTS 2050. Cultural Diversity in American Art. 3 hours.
Past and present art created by African Americans, Asian Americans, Hispanic Americans and Native Americans.

ARTS 4900/6900. Professional Practices: The Business Side of Art. 3 hours.
The business practices necessary for an exhibiting and practicing artist to survive in the contemporary art market. Assignments will focus on professional development. Each student will leave the class with a packet of material to approach galleries, museums, and other art centers for exhibitions.

ARTS 4920/6920. Seminar in Contemporary Art. 3 hours.
Prerequisite: ARHI 2100.
Contemporary art from the point of view of studio artists.

ARTS 4960H. Directed Projects in Honors. 3 hours.
Prerequisite: Permission of Honors.
Special projects under the direction of an approved advisor for Honors students of senior division standing.
Non-traditional format: Arranged between student and advisor.

ARTS 4970H. Directed Projects in Honors. 3 hours.
Prerequisite: Permission of Honors.
Special projects under the direction of an approved advisor for Honors students of senior division standing.
Non-traditional format: Arranged between student and advisor.

ARTS 4980H. Directed Projects in Honors. 3 hours.
Prerequisite: Permission of Honors.
Special projects under the direction of an approved advisor for Honors students of senior division standing.
Non-traditional format: Arranged between student and advisor.

ARTS 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research under an approved advisor for an Honors student in the field of his/her major or in a closely related field.
Non-traditional format: Arranged between student and advisor.

(ASTR) Astronomy

College of Arts and Sciences, Department of Physics and Astronomy

ASTR 1010. Astronomy of the Solar System. 3 hours.
Not open to students with credit in ASTR 1110H.
Astronomy from early ideas of the cosmos to modern observational techniques. The solar system planets, satellites, and minor bodies. The origin and evolution of the solar system.

ASTR 1010L. Astronomy of the Solar System Laboratory. 1 hour. 2 hours lab per week.
Not open to students with credit in ASTR 1110L.
Prerequisite or corequisite: ASTR 1010.

Astronomy laboratory to accompany Astronomy of the Solar System.

ASTR 1020. Stellar and Galactic Astronomy. 3 hours.
Not open to students with credit in ASTR 1120H.
The study of the sun and stars, their physical properties and evolution, interstellar matter, star clusters, our galaxy and other galaxies, and the origin and evolution of the Universe.

ASTR 1020L. Stellar and Galactic Astronomy Laboratory. 1 hour. 2 hours lab per week.
Not open to students with credit in ASTR 1120L.
Prerequisite or corequisite: ASTR 1020.
Astronomy laboratory to accompany Stellar and Galactic Astronomy.

ASTR 1110L. Introduction to Astronomy Laboratory (Honors). 1 hour. 2 hours lab per week.
Not open to students with credit in ASTR 1010L.
Prerequisite or corequisite: ASTR 1110H.
Astronomy laboratory to accompany Introduction to Astronomy (Honors).

ASTR 1110H. Introduction to Astronomy (Honors). 3 hours.
Not open to students with credit in ASTR 1010.
Prerequisite: Permission of Honors.
The development of astronomy from ancient times. Telescopes and astronomical observations. The solar system: planets and their satellites, asteroids, comets, etc. The origin and evolution of the solar system.

ASTR 1120L. Introduction to Astronomy Laboratory (Honors). 1 hour. 2 hours lab per week.
Not open to students with credit in ASTR 1020L.
Prerequisite or corequisite: ASTR 1120H.
Astronomy laboratory to accompany Introduction to Astronomy.

ASTR 1120H. Introduction to Astronomy (Honors). 3 hours.
Not open to students with credit in ASTR 1020.
Prerequisite: Permission of Honors.
Our sun and other stars, their physical properties and evolution. Interstellar matter and star formation. The origin and evolution of our galaxy, other galaxies, quasars and the Universe.

ASTR 1420. Life in the Universe. 3 hours.
The astronomical, chemical and physical conditions for extraterrestrial life. The origins of terrestrial life. Search for extraterrestrial life and extraterrestrial intelligence. Strategies for communication with extraterrestrial intelligence.

ASTR 1540. Science, Science Fiction, and Pseudoscience. 3 hours.
Science facts versus speculation in science fiction books and films; examples of violations of scientific principles; debunking of UFOs, alien abductions, astrology, creationism and other pseudosciences.

ASTR 1660. History of Astronomy. 3 hours.
Discussion of the historical development of key astronomical ideas from ancient times to the modern age.

ASTR 1870. Black Holes. 3 hours.
History and development of general relativity, supernovae and compact objects. Observational evidence for stellar and supermassive black holes. Primordial black holes, wormholes, and the Big Bang. Contributions of Einstein, Chandrasekhar, Oppenheimer, Zwicky, Wheeler, Zel'dovich, Hawking, and Penrose.

ASTR 3010. Astronomical Observations and Techniques I. 3 hours.
Prerequisite: ASTR 1020 and ASTR 1020L.
Telescopes and astronomical observations, including photometry and spectroscopy. Laboratory exercises include visual, photographic, and photoelectric observations and data analysis with standard astronomical software.

ASTR 3020. Astronomical Observations and Techniques II. 3 hours.
Prerequisite: (ASTR 3010 and PHYS 1212-1212L) or permission of department.
Concepts, techniques, skills, and resources needed to plan, obtain, reduce, and interpret observations of astronomical objects.

ASTR 4010/6010. Astrophysics I. 3 hours.
Prerequisite: ASTR 1010 and ASTR 1020 and PHYS 3700 and PHYS 4101/6101.
Stellar astrophysics, stellar structure and atmospheres, formation of spectral lines and spectral classification, stellar evolution from star formation to planetary nebulae and supernovae and the resulting compact objects.

ASTR 4020/6020. Astrophysics II. 3 hours.
Prerequisite: ASTR 4010/6010.
Systems of stars, the interstellar medium and stellar populations, galaxies, their classification and evolution, extragalactic astronomy and cosmology.

ASTR 4330/6330. Astronomy Seminar. 1 hour.
Repeatable for maximum 4 hours credit.
Prerequisite: ASTR 1010 and ASTR 1020.
Prerequisite or corequisite: ASTR 3010 or ASTR 3020 or ASTR 4010/6010 or ASTR 4020/6020.
Seminar on contemporary topics in astronomy and astrophysics.

ASTR 4660. Astronomical Research. 1-3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: ASTR 3010.

Observations using modern techniques and equipment to investigate astronomical phenomena.
Non-traditional format: Independent study and research.

ASTR 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Meetings with project director will be arranged.

ASTR 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Meetings with project director will be arranged.

ASTR 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the field of his/her major or in a closely related field.
Non-traditional format: Meetings will be arranged with thesis advisor.

(AVMD) Avian Medicine

College of Veterinary Medicine, Department of Avian Medicine

AVMD 3730. Poultry Health. 3 hours.
Prerequisite: POUL 3600 and MIBO 3500.
Common infectious, parasitic, and nutritional diseases of poultry: the cause, diagnosis, prevention, and control. Offered to students majoring in poultry science and others who are qualified.

(BCMB) Biochemistry and Molecular Biology

College of Arts and Sciences, Department of Biochemistry and Molecular Biology

BCMB(BIOL)(CHEM) 3100. Introductory Biochemistry and Molecular Biology. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L.
The structure and function of biological molecules, enzymology, metabolism and bioenergetics, and recombinant DNA technology.

BCMB 4010/6010. Biochemistry and Molecular Biology I. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L.
A comprehensive treatment of biochemistry and molecular biology stressing structures of biological molecules, including proteins, nucleic acids, carbohydrates, and lipids, enzymology and selected aspects of metabolism and bioenergetics.

BCMB 4020/6020. Biochemistry and Molecular Biology II. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010.
A comprehensive treatment of biochemistry and molecular biology stressing aspects of metabolism, metabolic regulation, bioenergetics, and recombinant DNA methodologies.

BCMB 4030L/6030L. Laboratory Techniques in Biochemistry and Molecular Biology. 3 hours. 1 hour lecture and 6 hours lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010.
Basic techniques in biochemistry and molecular biology, including enzyme assays and purification, nucleic acid purification and characterization, chromatography, spectroscopy, and other modern methods.

BCMB(CHEM) 4110/6110. Physical Biochemistry. 3 hours.
Prerequisite: MATH 2210.
Prerequisite or corequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010 or PHYS 1112-1112L or PHYS 1212-1212L.
The principles of physical chemistry applied to biological molecules and systems, including current approaches in structural biology.

BCMB 4120/6120. Human Biochemistry and Disease. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010.
Integrated treatment of human biochemistry and selected topics on the biochemical basis of human disease. Examples will be given of inheritable and acquired disorders.

(BCMB) CHEM 4190/6190. Introduction to NMR Spectroscopy. 3 hours. 2 hours lecture and 3 hours lab per week.
Instrumental aspects of NMR spectroscopy including pulsed Fourier transform techniques, proton and carbon-13 techniques used in the analysis of organic compounds, polypeptides and other small molecules. The focus is on the operation of NMR spectrometers presently available in the University of Georgia Chemistry Department.

BCMB(ENTO) 4200/6200. Biotechnology. 3 hours.
Not open to students with credit in BCMB 4130/6130.
Prerequisite: BCMB(BIOL)(CHEM) 3100 and GENE(BIOL) 3200.

Prerequisite or corequisite: MIBO 3500 or CBIO(BIOL) 3400.
Applied aspects of biochemistry and molecular biology in various fields, with emphasis on the use of recombinant DNA methods and protein engineering.

BCMB 4960L. Laboratory Research in Biochemistry and Molecular Biology I. 3-5 hours. 9-15 hours lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010.
Basic techniques in biochemistry and molecular biology, application of the scientific method, and preparation of a written scientific report. For students with little or no laboratory experience.

BCMB 4960H. Laboratory Research in Biochemistry and Molecular Biology I (Honors). 3-5 hours. 9-15 hours lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010 or permission of Honors.
Basic techniques in biochemistry and molecular biology, application of the scientific method, and preparation of a written scientific report. For Honors students with little or no laboratory experience.

BCMB 4970L. Laboratory Research in Biochemistry and Molecular Biology II. 3-5 hours. Repeatable for maximum 10 hours credit. 9-15 hours lab per week.
Prerequisite: BCMB 4030L/6030L or BCMB 4960H.
Advanced techniques in biochemistry and molecular biology, application of the scientific method, and preparation of a written scientific report. For students with some laboratory experience.

BCMB 4970H. Laboratory Research in Biochemistry and Molecular Biology II (Honors). 3-5 hours. Repeatable for maximum 10 hours credit. 9-15 hours lab per week.
Prerequisite: BCMB 4030L/6030L or BCMB 4960H or permission of Honors.
Advanced techniques in biochemistry and molecular biology, application of the scientific method, and preparation of a written scientific report. For Honors students with some laboratory experience.

BCMB 4990H. Honors Thesis in Biochemistry and Molecular Biology. 3-5 hours. 9-15 hours lab per week.
Prerequisite: (BCMB 4010/6010 and BCMB 4030L/6030L) or BCMB 4960H or permission of Honors.
Prerequisite or corequisite: BCMB 4020/6020.
Laboratory research in biochemistry and molecular biology under the supervision of a faculty member. A thesis summarizing the literature in the field and the student's research findings is required.

(BIOL) Biology

College of Arts and Sciences, Department of Biology

BIOL 1103. Basic Concepts in Biology. 3 hours.
Not open to students with credit in BTNY 1210 or BTNY 1210L or BIOL 1107-1107L.
Science as a process, evolution, energy transfer, genetic continuity, complementarity of structure and function, regulation and homeostasis, interdependence in nature. Topics include chemistry of life, cells, cellular energetics, heredity, molecular genetics, growth and development, evolutionary biology, principles of ecology.

BIOL 1103H. Principles of Biology (Honors). 3 hours.
Not open to students with credit in BTNY 1210 or BTNY 1210L or BIOL 1107-1107L.
Prerequisite: Permission of Honors.
Central themes of Biology: science as a process, evolution, energy transfer, genetic continuity, complementarity of structure and function, regulation and homeostasis, interdependence in nature. Topics include: chemistry of life, cells, cellular energetics, heredity, molecular genetics, growth and development, evolutionary biology, principles of ecology.

BIOL 1103L. Concepts in Biology Laboratory. 1 hour. 2 hours lab per week.
Not open to students with credit in BIOL 1107-1107L or BTNY 1210 or BTNY 1210L.
Prerequisite or corequisite: BIOL 1103.
Introduction to cellular structure and function, Mendelian and population genetics, and environmental concepts. Observation and experimental exercises are combined with written assignments to reinforce content.

BIOL 1104. Organismal Biology. 3 hours.
Not open to students with credit in BTNY 1220 or BTNY 1220L or BIOL 1108-1108L.
A general biology course focused on organisms, including diversity and phylogeny. The relationship of biological history to geological time, structure and function, interaction with the environment, global issues.

BIOL 1104H. Organismal Biology (Honors). 3 hours.
Not open to students with credit in BTNY 1220 or BTNY 1220L or BIOL 1108-1108L.
Prerequisite: Permission of Honors.
A general biology course focused on organisms. Topics include: diversity and phylogeny, structure and function, interaction with the environment, global issues.

BIOL 1104L. Organismal Biology Laboratory. 1 hour. 2 hours lab per week.
Not open to students with credit in BTNY 1220 or BTNY 1220L or BIOL 1108-1108L.
Prerequisite or corequisite: BIOL 1104.
Introduction to diversity of bacteria; protists, fungi, plants, invertebrates; observational and experimental study of aquatic ecosystems; vertebrate physiology.

BIOL 1107-1107L. Principles of Biology I. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CHEM 1211 and CHEM 1211L.
Biological chemistry, cell structure and function, bioenergetics, mitosis and meiosis, genetics, gene expression and regulation, gene technology, population genetics, evolution.

BIOL 1107H. Principles of Biology I (Honors). 1 hour.
Prerequisite: Permission of Honors.
Corequisite: BIOL 1107-1107L.
Seminars, readings, and discussions of topics related to general biology.
Non-traditional format: This seminar course meets for 60-90 minutes weekly.

BIOL 1108-1108L. Principles of Biology II. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1103 and 1103L or BIOL 1107-1107L.
Microbial diversity and physiology; plant and animal diversity, growth, reproduction and physiology; ecology.

BIOL 1108H. Principles of Biology II (Honors). 1 hour.
Prerequisite: Permission of Honors.
Corequisite: BIOL 1108-1108L.
Seminars, readings, and discussion of topics related to general biology.
Non-traditional format: This seminar course meets for 60-90 minutes weekly.

BIOL 1990. Orientation to Biology Degree Programs. 1 hour.
Introduces students to the Division of Biological Sciences, its departments and the requirements for the biology degree, careers in the biological sciences.

(BIOL)ENTO 2010. Insects and the Environment. 3 hours.
Designed to acquaint students with our dependence on and interaction with insects in today's world.

(BIOL)HONS(CHEM)(GEOL)(PHYS) 2070H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in PHYS 1010 or CHEM 1110.
Prerequisite: (ENGL 1101 or MATH 1101) and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Occasional weekend field trips required.

(BIOL)HONS(CHEM)(GEOL)(PHYS) 2080H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in BTNY 1220 or BTNY 1220L or GEOL 1121.
Prerequisite: HONS(BIOL)(CHEM) (GEOL) (PHYS) 2070H and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Weekend field trips required.

BIOL 2990H. Seminar in Modern Biology (Honors). 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: [(BIOL 1103 and BIOL 1103L) or (BIOL 1104 and BIOL 1104L) or BIOL 1107-1107L or BIOL 1108-1108L] and permission of Honors.
Discussion of topics in modern biology with faculty members from the biological sciences. Topics will vary from year to year and several topics will be considered each semester.
Non-traditional format: This seminar course meets 60-90 minutes weekly.

(BIOL)BCMB(CHEM) 3100. Introductory Biochemistry and Molecular Biology. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L.
The structure and function of biological molecules, enzymology, metabolism and bioenergetics, and recombinant DNA technology.

BIOL 3110L. Basic Skills in the Laboratory. 4 hours. 12 hours lab per week.
Prerequisite: BIOL 1107-1107L and CHEM 2211 and CHEM 2211L.
An intensive laboratory course emphasizing acquisition of skills in common use in research laboratories. Techniques range from solution preparation to isolation and analysis of DNA and protein. Includes proper procedures for keeping a laboratory notebook, laboratory safety, and time management.

(BIOL)GENE 3200. Genetics. 4 hours. 3 hours lecture and 1 hour discussion per week.
Prerequisite or corequisite: [BIOL 1104 and BIOL 1104L or BIOL 1108-1108L] and [BCMB (BIOL)(CHEM) 3100 or BCMB 4010/6010].
Genetic mechanisms in viruses, bacteria, and eukaryotic cells in a comparative sense. Topics include molecular genetics and gene action, transfer systems and mapping, cytological, quantitative, and population genetics.

(BIOL)GENE 3200H. Genetics. 1 hour.
Prerequisite or corequisite: [(BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L] and [BCMB (BIOL) (CHEM) 3100 or BCMB 4010/6010] and GENE(BIOL)3200.
Genetic mechanisms in viruses, bacteria, and eukaryotic cells in a comparative sense. Topics include molecular genetics and gene action, transfer systems and mapping, cytological, quantitative, and population genetics. Seminar focusing on the scientific literature relevant to genetics, and discussions of topics in genetics.

(BIOL)GENE 3210L. Experimental Genetics. 3 hours. 6 hours lab per week.
Not open to students with credit in (BIOL)GENE 3210.
Prerequisite or corequisite: GENE(BIOL) 3200.
Drosophila, bacteria, phage and fungal systems for the analysis of mutation, transfer systems, mapping, complementation, population studies, and other genetic principles.

(BIOL)CBIO 3300. Developmental Biology. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100.
Prerequisite or corequisite: GENE(BIOL) 3200 or PGEN 3580.
Cell differentiation and morphogenesis, primarily in animal development. Gene regulation at the molecular level, gametogenesis, fertilization, normal embryonic development, cell and tissue interactions, hormonal regulation, and developmental aspects of cancer and the immune response.

(BIOL)CBIO 3400. Cell Biology. 3 hours. 3 hours lecture and 1 hour lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010.
Prerequisite or corequisite: GENE(BIOL) 3200.
Structure and function of cells: cell architecture and organization, cell cycle, membrane phenomena, organellogenesis, energy transduction, and cellular control mechanisms.

(BIOL)CBIO 3410L. Laboratory in Cellular and Developmental Biology. 4 hours. 10 hours lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100.
Cell biology research techniques in cell cycle and cell differentiation, cell adhesion, motility, molecular transport, and cell metabolism. Cell culture, cell fractionation, fluorescence and laser-confocal microscopy, electron microscopy, immunocytochemistry, DNA isolation, polymerase chain reaction, and DNA sequencing.

(BIOL)ECOL 3500-3500L. Ecology. 4 hours. 3 hours lecture and 3 hours lab per week.
Not open to students with credit in GEOG 3210.
Prerequisite: (BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or BTNY 1220 and BTNY 1220L) and [(CHEM 1211 and CHEM 1211L) or (CHEM 1311H and CHEM 1311L)].
Population structure and dynamics, organization and classification of communities, and nutrient and energy flows in ecosystems.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

(BIOL)ECOL 3510. Ecology Laboratory. 3-4 hours. Repeatable for maximum 10 hours credit.
Prerequisite: ECOL(BIOL) 3500-3500L.
Techniques and methodologies to assess organismal, population, community, or ecosystem interactions.
Non-traditional format: A field course taught for blocks of time off-campus (semester breaks or summer). Additional on-campus lecture hours may be added depending upon the field schedule.

(BIOL)(ECOL)(EHSC)ENTO(LAND) 3590-3590L. Urban Entomology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: (BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L or permission of department.
Urban entomology, including identification, biology, and control of insects and selected arthropod pests with emphasis on the efficacy and environmental impact of pest control tactics in the urban habitat.

BIOL 3700. Animal Behavior. 3 hours.
Prerequisite: BIOL 1108-1108L.
Principles of animal behavior, integrating genetic, physiological, developmental, and evolutionary aspects. Topics include communication, reproduction, sociality, foraging, defense, migration, habitat selection, and learning.

BIOL 3710L. Animal Behavior Laboratory. 3 hours. 6 hours lab per week.
Prerequisite or corequisite: BIOL 3700.
Firsthand experience with diverse living animals illustrates behavior principles and provides experience with methods and techniques of behavior research. Data analysis and written communication of experimental results are important components.

(BIOL)CBIO 3800. Neurobiology. 3 hours.
Prerequisite or corequisite: BIOL 1104 or BIOL 1108-1108L.
Structural organization, cell biology, physiology, development, and integration of the nervous system. This course integrates individual nervous system cells into neural systems for motivation, locomotion, perception, and learning.

BIOL 3900. Readings in Biology. 1-3 hours.
Repeatable for maximum 3 hours credit.
Individual study or readings under the direction of a faculty member.
Non-traditional format: Individual study or readings under the direction of a faculty member.

BIOL 3900H. Readings in Biology (Honors). 1-3 hours.
Not open to students with credit in BIOL 3900.
Prerequisite: Permission of Honors.
Individual study or readings under the direction of a faculty member.
Non-traditional format: The hours for this reading course are arranged by the student and the professor.

(BIOL)GENE 4210L. Molecular Genetics Laboratory. 4 hours. 9 hours lab per week.
Prerequisite: GENE(BIOL) 3200.
Lab techniques in molecular genetics for advanced undergraduate students. Basic genetic and recombinant DNA approaches in contemporary molecular biology: use of computers for database searches, DNA sequence analysis, and molecular modeling.

(BIOL)ANTH(BTNY)(ECOL)(ENTO) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

(BIOL) (ANTH) (BTNY) ECOL (ENTO) (FORS) (GEOG) (GEOL) (PATH) 4261. Museum of Natural History Internship. 3 hours.
Repeatable for maximum 6 hours credit. 7 hours lab per week.
Prerequisite: Permission of instructor and permission of Museum of Natural History.
Supervised work experience with a natural history collection. Students will learn techniques and other procedures for curating materials in a collection of their choice under the direction of collection personnel.
Non-traditional format: Students will maintain regular, weekly work schedules totaling 7 hours per week under the supervision of faculty and other collection personnel associated with the Museum of Natural History.

(BIOL)BTNY(CRSS) 4500/6500. Introduction to Gene Technology. 3 hours.
Prerequisite: GENE(BIOL) 3200.
Methods and applications of gene technology (recombinant DNA) and related concepts in molecular biology. These will include structure and synthesis of macromolecules; cDNA and genomic cloning, polymerase chain reaction; molecular markers and mapping; gene isolation strategies; and various host-vector systems.

(BIOL)GENE 4600/6600. Evolutionary Biology. 3 hours.
Prerequisite: (BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L.
An introduction to the processes of evolution. Topics include population genetics, speciation, systematics, coevolution, chemical origin of life, history of life, geological record, and evolution of humans.

BIOL 4940. Internship in Biology. 3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: BIOL 1107-1107L and BIOL 1108-1108L and permission of department.
Supervised work experience with public agencies, private industry, mass media, or non-profit organizations in the area of the biological sciences. Examples of work experience include traineeships in scientific investigation, environmental impact assessment, financial analysis, mass media, biotechnology law, and informatics. In addition to an off-campus workplace and supervisor, students must identify a UGA faculty member to serve as an academic interface/coordinator. Students must submit a proposal or other documentation (e.g., letter from supervisor) outlining their duties and responsibilities to the faculty coordinator who must approve it.
Non-traditional format: Students will be engaged in supervised work experience with public agencies, private industry, mass media, or non-profit organizations in the area of the biological sciences. After completing the internship students must turn in a final report explaining their experience and results. The internship supervisor must certify that the student completed the internship satisfactorily and, in consultation with the faculty coordinator, agree on a grade.

BIOL 4960. Undergraduate Research in Biology. 4 hours. Repeatable for maximum 12 hours credit. 12 hours lab per week.
Prerequisite: Permission of department.
Laboratory research conducted under the supervision of a faculty member in biological sciences. Arrangements must be made in advance. A final paper/report is required to receive credit toward the Biology major.
Non-traditional format: Students will meet with faculty members on a regular basis.

BIOL 4960H. Undergraduate Research in Biology (Honors). 4 hours. 12 hours lab per week.
Not open to students with credit in BIOL 4960.
Prerequisite: Permission of Honors.
Laboratory research conducted under the supervision of a faculty member in biological sciences. Arrangements must be made in advance. A final paper/report is required to receive credit toward the Biology major.
Non-traditional format: Students will meet with faculty members on a regular basis.

BIOL 4970H. Undergraduate Research in Biology (Honors). 4 hours. 12 hours lab per week.
Prerequisite: Permission of Honors.
Laboratory research conducted under the supervision of a faculty member in Biological Sciences. Arrangements must be made in advance. A final paper/report is required.
Non-traditional format: Students will meet with faculty members on a regular basis.

BIOL 4980H. Undergraduate Research in Biology (Honors). 4 hours. 12 hours lab per week.
Prerequisite: Permission of Honors.
Laboratory research conducted under the supervision of a faculty member in biological sciences. Arrangements must be made in advance. A final paper/report is required.
Non-traditional format: Students will meet with faculty members on a regular basis.

BIOL 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field or in a closely related field.
Non-traditional format: Ten hours of research per week.

BIOL(CBIO)(VPAT) 5040/7040. Electron Microscopy. 3 hours.
Prerequisite: [(CHEM 1212 and CHEM 1212L) or (CHEM 1412 and CHEM 1412L)] and PHYS 1112-1112L.
Instrument theory and theory of specimen preparation for both transmission and scanning electron microscopy. Fundamentals of X-ray microanalysis, image processing, and image analysis.

BIOL(CBIO) 5050L/7050L. Electron Microscopy Laboratory. 3 hours. 6 hours lab per week.
Prerequisite or corequisite: BIOL(CBIO)(VPAT) 5040/7040 or permission of department.
Operation of both transmission (TEM) and scanning electron microscopes (SEM). Preparation of specimens (ultramicrotomy, critical point drying, negative staining) for examination in both TEM and SEM. Basics of X-ray microanalysis.

BIOL 5080. Current Topics in Biology. 3 hours.
Current topics in biology for high school teachers.

(BTNY) Botany

College of Arts and Sciences, Department of Botany

BTNY 1210. Principles of Plant Biology. 3 hours.
Not open to students with credit in BIOL 1103 or BIOL 1107-1107L.
Basic principles of biology with an emphasis on plants, including science as a process, cell biology, biochemistry, plant structure and function, energy metabolism, genetics, evolution, and ecology.

BTNY 1210H. Principles of Plant Biology (Honors). 1 hour. 1.5 hours lab per week.
Not open to students with credit in BIOL 1103 or BIOL 1107H or BIOL 1107-1107L.
Prerequisite: Permission of Honors.
Corequisite: BTNY 1210L.
Basic principles of biology with an emphasis on plants, including science as a process, cell biology, biochemistry, plant structure and function, energy metabolism, genetics, evolution, ecology.

BTNY 1210L. Principles of Plant Biology Laboratory. 1 hour. 2 hours lab per week.
Not open to students with credit in BIOL 1103 or BIOL 1103L or BIOL 1107-1107L.
Prerequisite or corequisite: BTNY 1210.
Provides the opportunity to perform experiments designed to convey the basic principles of plant biology with an emphasis on cell biology, plant structure and function, energy metabolism, genetics, evolution, and ecology.

BTNY 1220. Organismal Plant Biology. 3 hours.
Not open to students with credit in BIOL 1104 or BIOL 1104L or BIOL 1108-1108L.
Plant biology course focused on organisms, including evolution and diversity of plants, fungi, algae, and prokaryotes;
environmental interactions; community ecology, symbiosis, and the relation of these organisms to human affairs.

BTNY 1220H. Organismal Plant Biology (Honors). 1 hour. 1.5 hours lab per week.
Not open to students with credit in BIOL 1104 and BIOL 1104L or BIOL 1108H or BIOL 1108-1108L.
Prerequisite: Permission of Honors.
Corequisite: BTNY 1220L.
Plant biology course focused on organisms. Topics include evolution and diversity of plants, algae, and fungi; environmental interactions; global environmental issues; ethnobotany.

BTNY 1220L. Organismal Plant Biology Laboratory. 1 hour. 2 hours lab per week.
Not open to students with credit in BIOL 1104L or BIOL 1108-1108L.
Prerequisite or corequisite: BTNY 1220.
Investigative laboratory experience concerning the diversity of plants, fungi, algae, and prokaryotes; observational study of the major groups of land plants; human uses of plants and plant products.

(BTNY)PATH(ANTH) 3010. Fungi: Friends and Foes. 3 hours.
Impact of fungi on human affairs. Historical and current uses of fungi by humans as well as the roles of fungi in various ecosystems.

(BTNY)HORT(ANTH) 3440. Herbs, Spices, and Medicinal Plants. 2 hours.
Historical and contemporary significance of herbs, spices, and medicinal plants in human culture and commerce; chemical and biological characteristics; commercial production techniques; application in modern and traditional medical systems.

BTNY 3830-3830L. Plant Physiology. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: BTNY 1210 or BIOL 1103.
Plant physiology for students interested in mechanisms of plant growth and environmental adaptation. Water relations,mineral nutrition, transport of materials, respiration, photosynthesis, growth and development.

BTNY 3900. Readings in Botany. 1-3 hours. Repeatable for maximum 9 hours credit.
Individual or small group directed readings from scientific journals in a selected area of Botany.
Non-traditional format: Independent research.

BTNY 3900H. Readings in Botany (Honors). 1-3 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in BTNY 3900.
Prerequisite: Permission of Honors.
Individual or small group directed readings from scientific journals in a selected area of Botany.
Non-traditional format: Independent research.

BTNY 4160. Life and Death in the Salt Marsh. 4 hours. 10 hours lecture and 10 hours lab per week.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or BTNY 1220 and BTNY 1220L or permission of department.
The diversity, adaptations, and interacting functional roles of estuarine plants, animals, and microorganisms. Maymester course which includes a week of study on Sapelo Island where students carry out investigative field research on a chosen topic. The final week is devoted to science writing and presentations.
Non-traditional format: Weeks one and three are lecture hours and week two is full day (8-10 hrs) field study. Offered as in-service course during Maymester.

(BTNY)PATH 4200/6200-4200L/6200L. Introductory Mycology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: (BTNY 1210 and BTNY 1210L and BTNY 1220 and BTNY 1220L) or (BIOL 1103 and BIOL 1103L and BIOL 1104 and BIOL 1104L) or (BIOL 1107-1107L and BIOL 1108-1108L).
Morphology, biology, and taxonomy of fungi. Representatives of all major groups of fungi are considered.

(BTNY)CRSS 4210/6210. Seed Physiology. 3 hours.
Undergraduate prerequisite: [CHEM 2100 or CHEM 2211 or BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010] and [PGEN 3580 or GENE(BIOL) 3200 or BTNY(CRSS)(BIOL) 4500/6500].
Undergraduate corequisite: CRSS 3300 or HORT 4210/6210 or HORT 4440/6440-4440L/6440L or BTNY 3830-3830L.
Regulation of anabolic and catabolic events during seed development, maturation, and germination processes. Ecophysiological consequences of dormancy variables, and agricultural and industrial significance of seed physiology.

(BTNY)GEOG 4220/6220. Ecological Biogeography. 3 hours.
Prerequisite: GEOG 1111 or ECOL(BIOL) 3500-3500L or permission of department.
Patterns of plant distribution in contemporary landscapes and underlying processes, including vegetation dynamics, disturbance ecology, biogeo morphology, dendrochronology, and environmental history.

BTNY 4230/6230-4230L/6230L. Plant Anatomy. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or (BTNY 1220 and BTNY 1220L and CBIO(BIOL) 3400) or permission of department.
Structure and growth of meristems; development and structure of cells, tissues, and tissue systems; comparative anatomy of stems, roots, leaves, flowers, and fruits; survey of recent advances in study of growth and development of form and emphasis on experimental approaches. Assumes elementary knowledge of cell and tissue structure.

(BTNY)GEOG 4240/6240. Plant Geography. 3 hours.
Prerequisite: GEOG 3210 or ECOL(BIOL) 3500-3500L or permission of department.
Biogeography and ecology of the world's main

terrestrial biomes. Includes world bioclimatic zonation, plant-geographic processes, other physical environmental factors, plant functional roles and types, vegetation dynamics, response to disturbance, and potential natural vegetation. Emphasis on global scale, with secondary emphasis on North America.

BTNY 4250/6250. Biology of Natural Plant Products. 3 hours.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or BTNY 1220 and BTNY 1220L or permission of department.
The biological/ecological role of natural plant products or metabolites such as alkaloids, terpenes, and pigments in relationships and interactions among plants and between plants and animals.

(BTNY)ANTH(BIOL)(ECOL)(ENTO) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

(BTNY) (ANTH) (BIOL) ECOL (ENTO) (FORS) (GEOG) (GEOL) (PATH) 4261. Museum of Natural History Internship. 3 hours. Repeatable for maximum 6 hours credit. 7 hours lab per week.
Prerequisite: Permission of instructor and permission of Museum of Natural History.
Supervised work experience with a natural history collection. Students will learn techniques and other procedures for curating materials in a collection of their choice under the direction of collection personnel.
Non-traditional format: Students will maintain regular, weekly work schedules totaling 7 hours per week under the supervision of faculty and other collection personnel associated with the Museum of Natural History.

(BTNY)ANTH 4300/6300-4300L/6300L. Ethnobotany. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ANTH 1102 or permission of major.
Ethnobotanical research, with focus on knowledge and utilization of the plant world in traditional societies. Comparisons of societies in tropical forest ecosystems and evaluation of issues relating to intellectual property rights and traditional peoples' knowledge of plant species with potential economic value.

BTNY(CRSS)(BIOL) 4500/6500. Introduction to Gene Technology. 3 hours.
Prerequisite: GENE(BIOL) 3200.
Methods and applications of gene technology (recombinant DNA) and related concepts in molecular biology. These will include structure and synthesis of macromolecules; cDNA and genomic cloning, polymerase chain reaction; molecular markers and mapping; gene isolation strategies; and various host-vector systems.

(BTNY)CBIO 4600/6600-4600L/6600L. Biology of Protists. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or BTNY 1220 and BTNY 1220L.
Protists (algae, protozoa, and zoosporic fungi) with an emphasis on cell structure, evolution, and life histories. Laboratories will concentrate on examination of living and fixed materials and will include methods of isolation and culturing of protists.

BTNY 4650/6650-4650L/6650L. Plant Taxonomy. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or BTNY 1220 and BTNY 1220L or permission of department.
History of taxonomy, nomenclature, characters, identification principles, classification, taxonomic relationships, taxonomic literature, species biology, collecting and herbarium, floristic studies.

BTNY(ECOL) 4750/6750. Tropical Ecology and Conservation. 3 hours.
Prerequisite: BIOL 1107-1107L and BIOL 1108-1108L.
Patterns and processes in the origin, maintenance, and loss of the high biological diversity in the tropics, emphasizing particular communities and ecosystems, including tropical rainforest, tropical savannas, tropical islands, and coral reefs.

BTNY 4850/6850-4850L/6850L. Vegetation Analysis. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: (ECOL(BIOL) 3500-3500L and STAT 6220) or permission of department.
Rationale and protocols for various methods of studying vegetation at the population, community and landscape levels. Both field sampling and data analysis techniques will be covered with introduction to several software packages.

BTNY 4930. Science Writing for General Audiences. 3 hours.
Basics of good writing, editing, and genres of science writing. Students read and discuss science pieces from the popular press and write and critique their own pieces. Includes guest lectures by professional

science writers and examination of how the culture of science affects reporting.

BTNY 4960. Independent Research in Botany. 1-3 hours. Repeatable for maximum 12 hours credit.
Independent research and research participation in a selected area of Botany.
Non-traditional format: Independent research.

BTNY 4960H. Independent Research in Botany (Honors). 3 hours.
Not open to students with credit in BTNY 4960.
Prerequisite: Permission of Honors.
Independent research and research participation for Honors students in a selected area of Botany.
Non-traditional format: Students will meet with faculty members on a regular basis.

BTNY 4970H. Independent Research in Botany (Honors). 3 hours.
Prerequisite: Permission of Honors.
Independent research and research participation for Honors students in a selected area of Botany.
Non-traditional format: Students will meet with faculty members on a regular basis.

BTNY 4980H. Independent Research in Botany (Honors). 3 hours.
Prerequisite: Permission of Honors.
Independent research and research participation for honors students in a selected area of Botany.
Non-traditional format: Students will meet with faculty members on a regular basis.

BTNY 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Independent research and research participation for Honors students in a selected area of Botany.
Non-traditional format: Students will meet with faculty members on a regular basis.

(BUSN) Business

Terry College of Business

BUSN 4960H. Honors Research. 3 hours.
Prerequisite: Permissions of Honors.
Independent reading, study, and research on a specified topic supervised by a faculty member.
Non-traditional format: Directed research and study done independently of a regularly scheduled class.

BUSN 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
This course provides opportunity for an honors student to undertake individual research in the field of his or her major.
Non-traditional format: Thesis preparation done independently of a regularly scheduled class.

(CBIO) Cellular Biology

College of Arts and Sciences, Departmen of Cellular Biology

CBIO 2200-2200L. Anatomy and Physiology I. 4 hours. 2.5 hours lecture and 2.5 hours lab per week.
Not open to students with credit in CBIO 3200-3200L.
Systematic study of the anatomy and physiology of the human body at cellular, tissue, and gross levels.

CBIO 2210-2210L. Anatomy and Physiology II. 4 hours. 2.5 hours lecture and 2.5 hours lab per week.
A continuation of Anatomy and Physiology I.

CBIO 3000-3000L. Comparative Vertebrate Anatomy. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in ECOL 3260-3260L.
Prerequisite : BIOL 1103 and BIOL 1103L or BIOL 1104 and BIOL 1104L or BIOL 1107-1107L or BIOL 1108-1108L.
Comparative systemic vertebrate anatomy emphasizing structure and function.

(CBIO)PARA 3100. People, Parasites, and Plagues. 3-4 hours. 3 hours lecture and 1-2 hours in discussion group per week.
Prerequisite: (BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L.
A multi-disciplinary approach to examining the impact of infectious diseases on human populations. Current persistent, epidemic, and emerging diseases and how they are identified, studied, and combatted will be discussed. Topics will also include the sociological, psychological, historical, legal, environmental, and economic implications of disease.
Non-traditional format: Students enrolling in the course for four credit hours will be required to attend three hours of lecture each week plus a biweekly discussion meeting for two hours.

(CBIO)PARA 3100H. People, Parasites, and Plagues (Honors). 3 hours.
Prerequisite: [(BIOL 1103 and BIOL 1103L) or (BIOL 1107-1107L)] and permission of Honors.
A multi-disciplinary approach to examining the impact of infectious diseases on human populations. Current persistent, epidemic and emerging diseases and how they are identified, studied and combatted will be discussed. Topics will also include the sociological, psychological, historical, legal, environmental, and economic implications of disease.

Non-traditional format: Honors students will be required to meet for a 1 hour discussion group each week in addition to meeting for the three hours of normal weekly lecture.

CBIO(BIOL) 3300. Developmental Biology. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100.
Prerequisite or corequisite: GENE(BIOL) 3200 or PGEN 3580.
Cell differentiation and morphogenesis, primarily in animal development. Gene regulation at the molecular level, gametogenesis, fertilization, normal embryonic development, cell and tissue interactions, hormonal regulation, and developmental aspects of cancer and the immune response.

CBIO(BIOL) 3400. Cell Biology. 3 hours. 3 hours lecture and 1 hour lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4010.
Prerequisite or corequisite: GENE(BIOL) 3200.
Structure and function of cells: cell architecture and organization, cell cycle, membrane phenomena, organellogenesis, energy transduction, and cellular control mechanisms.

CBIO(BIOL) 3410L. Laboratory in Cellular and Developmental Biology. 4 hours. 10 hours lab per week.
Prerequisite: BCMB(BIOL)(CHEM) 3100.
Cell biology research techniques in cell cycle and cell differentiation, cell adhesion, motility, molecular transport, and cell metabolism. Cell culture, cell fractionation, fluorescence and laser-confocal microscopy, electron microscopy, immunocytochemistry, DNA isolation, polymerase chain reaction, and DNA sequencing.

CBIO 3700. Principles of Animal Physiology. 3 hours.
Prerequisite: BIOL 1108-1108L.
Physiology and variations related to lifestyle and complexity among animals. Cellular bases of organismic function: homeostasis, neural and endocrine function, muscle function, metabolism, secretion, absorption, osmoregulation, and thermoregulation.

CBIO(BIOL) 3800. Neurobiology. 3 hours.
Prerequisite or corequisite: BIOL 1104 or BIOL 1108-1108L.
Structural organization, cell biology, physiology, development, and integration of the nervous system. This course integrates individual nervous system cells into neural systems for motivation, locomotion, perception, and learning.

CBIO(MIBO) 4100/6100. Immunology. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 and GENE (BIOL) 3200.
Immunology from an experimental perspective. Anatomy, development, and function of the immune system. Immune system in infectious diseases. Mechanisms and pathogenesis of immunological disorders. Evolution of immunological concepts.

CBIO 4340/6340. Biology of Aging. 3 hours.
Prerequisite: BIOL 1107-1107L and BIOL 1108-1108L
Biological processes accompanying aging in human and other organisms. Emphasis on physiological decline; theoretical explanations; attempts to prolong life; and the utility and limitations of model systems used to analyze human aging.

CBIO 4500/6500-4500L/6500L. Medical Parasitology. 4 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Major protozoan and metazoan endo- and ectoparasites of humans. Principles of parasitism and general biology of each parasite. Vector biology, epidemiology, control, and treatment of parasitic diseases are discussed. Laboratory stresses diagnosis and identification, and introduces pathology through the use of fixed and living material.

CBIO(BTNY) 4600/6600-4600L/6600L. Biology of Protists. 4 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or BTNY 1220 and BTNY 1220L.
Protists (algae, protozoa, and zoosporic fungi) with an emphasis on cell structure, evolution, and life histories. Laboratories will concentrate on examination of living and fixed materials and will include methods of isolation and culturing of protists.

CBIO 4730/6730. Endocrinology. 3 hours.
Prerequisite: (BIOL 1103 and BIOL 1103L and BIOL 1104 and BIOL 1104L) or (BIOL 1107-1107L and BIOL 1108-1108L).
Vertebrate endocrinology and the principles of chemical integration, emphasizing the physiology of regulatory mechanisms and the cellular and molecular bases of hormone action.

CBIO 4960H. Directed Reading and/or Laboratory Research (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or laboratory research directed by faculty of the Cellular Biology department.

CBIO 4970. Directed Reading. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Oral and written evaluation of original papers and reviews in cellular biology directed by a member of

the department faculty.
Non-traditional format: Directed study.

CBIO 4970H. Directed Reading and/or Laboratory Research (Honors). 4 hours.
Not open to students with credit in CBIO 4970.
Prerequisite: Permission of Honors.
Individual study, reading, or laboratory research directed by faculty of the Cellular Biology department.
Non-traditional format: Independent research under the direction of a faculty member.

CBIO 4980. Research in Cellular Biology. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent laboratory research directed by departmental faculty members. Two semesters may fulfill the departmental techniques requirement.
Non-traditional format: Independent research under the direction of a faculty member.

CBIO 4980H. Directed Reading and/or Laboratory Research (Honors). 3 hours.
Not open to students with credit in CBIO 4980.
Prerequisite: Permission of Honors.
Individual study, reading, or laboratory research directed by faculty of the cellular biology department.
Non-traditional format: Independent research under the direction of a faculty member.

CBIO 4990. Seminar in Cellular Biology. 1 hour. Repeatable for maximum 3 hours credit. 1 hour lab per week.
Presentation of original research and critical surveys of cellular biology literature. Required of all cellular biology majors.

CBIO 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Preparation of Honors thesis under supervision of departmental faculty.
Non-traditional format: Independent research and thesis preparation.

(CBIO)BIOL(VPAT) 5040/7040. Electron Microscopy. 3 hours.
Prerequisite: [(CHEM 1212 and CHEM 1212L) or (CHEM 1412 and CHEM 1412L)] and PHYS 1112-1112L.
Instrument theory and theory of specimen preparation for both transmission and scanning electron microscopy. Fundamentals of X-ray microanalysis, image processing, and image analysis.

(CBIO)BIOL 5050L/7050L. Electron Microscopy Laboratory. 3 hours. 6 hours lab per week.
Prerequisite or corequisite: BIOL(CBIO)(VPAT) 5040/7040 or permission of department.
Operation of both transmission (TEM) and scanning electron microscopes (SEM). Preparation of specimens (ultramicrotomy, critical point drying, negative staining) for examination in both TEM and SEM. Basics of X-ray microanalysis.

(CHEM) Chemistry

College of Arts and Sciences, Department of Chemistry

CHEM 1060-1060L. Physical Science for Teachers. 4 hours. 3 hours lecture and 3 hours lab per week.
Physical science for education majors planning to teach science at the middle school level. Limited to candidates for B.S. in Education degrees.

CHEM 1110. Elementary Chemistry. 3 hours.
A one-semester, non-mathematical study of chemical principles with an emphasis on environmental issues.

CHEM 1110L. Elementary Chemistry Laboratory. 1 hour. 3 hours lab per week.
Corequisite: CHEM 1110.
Laboratory experiments performed to illustrate the reactions, principles, and techniques presented in Elementary Chemistry.

CHEM 1211. Freshman Chemistry I. 3 hours.
Not open to students with credit in CHEM 1311H or CHEM 1411.
Prerequisite or corequisite: MATH 1113.
The chemical principles involved in stoichiometry, structure, bonding, and reactivity.

CHEM 1211L. Freshman Chemistry Laboratory I. 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 1311L or CHEM 1411L.
Corequisite: CHEM 1211.
Students will perform experiments to illustrate the reactions, principles, and techniques presented in Freshman Chemistry I.

CHEM 1212. Freshman Chemistry II. 3 hours.
Not open to students with credit in CHEM 1312H or CHEM 1412.
Prerequisite: CHEM 1211 or CHEM 1311H or CHEM 1411.
Second semester of an in-depth study of the chemical principles involved in stoichiometry, structure, bonding, and reactivity.

CHEM 1212L. Freshman Chemistry Laboratory II. 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 1312L or CHEM 1412L.
Prerequisite: CHEM 1211L or CHEM 1311L or CHEM 1411L.
Corequisite: CHEM 1212.
Students will perform experiments to illustrate the

reactions, principles, and techniques presented in Freshman Chemistry II.

CHEM 1311L. Advanced Freshman Chemistry Laboratory I (Honors). 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 1211L or CHEM 1411L.
Prerequisite or corequisite: MATH 1113.
Corequisite: CHEM 1311H.
Students will perform experiments to illustrate the reactions, principles, and techniques presented in Advanced Freshman Chemistry I.

CHEM 1311H. Advanced Freshman Chemistry I (Honors). 3 hours.
Not open to students with credit in CHEM 1211 or CHEM 1411.
Prerequisite: Permission of Honors.
Prerequisite or corequisite: MATH 1113.
The chemical principles involved in stoichiometry, structure, bonding, and reactivity.

CHEM 1312L. Advanced Freshman Chemistry Laboratory II (Honors). 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 1212L or CHEM 1412L.
Prerequisite: CHEM 1211L or CHEM 1311L or CHEM 1411L.
Corequisite: CHEM 1312H.
Students will perform experiments to illustrate the reactions, principles, and techniques presented in Advanced Freshman Chemistry II.

CHEM 1312H. Advanced Freshman Chemistry II (Honors). 3 hours.
Not open to students with credit in CHEM 1212 or CHEM 1412.
Prerequisite: (CHEM 1211 or CHEM 1311H or CHEM 1411) and permission of Honors.
Second semester of a rigorous in-depth study of the chemical principles involved in stoichiometry, structure, bonding, and reactivity.

CHEM 1411. Advanced Modern Chemistry I. 3 hours.
Not open to students with credit in CHEM 1211 or CHEM 1311H.
Prerequisite or corequisite: MATH 1113.
First semester of a rigorous in-depth study of the chemical principles involved in stoichiometry, structure, bonding, and reactivity.

CHEM 1411L. Advanced Modern Chemistry Laboratory I. 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 1211L or CHEM 1311L.
Prerequisite or corequisite: MATH 1113.
Corequisite: CHEM 1411.
Students will perform experiments to illustrate the reactions, principles, and techniques presented in Advanced Modern Chemistry I.

CHEM 1412. Advanced Modern Chemistry II. 3 hours.
Not open to students with credit in CHEM 1212 or CHEM 1312H.
Prerequisite: CHEM 1211 or CHEM 1311H or CHEM 1411.
Second semester of a rigorous in-depth study of the chemical principles involved in stoichiometry, structure, bonding, and reactivity.

CHEM 1412L. Advanced Modern Chemistry Laboratory II. 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 1212L or CHEM 1312L.
Prerequisite: CHEM 1211L or CHEM 1311L or CHEM 1411L.
Corequisite: CHEM 1412.
Students will perform experiments to illustrate the reactions, principles, and techniques presented in Advanced Modern Chemistry II.

(CHEM)HONS(BIOL)(GEOL)(PHYS) 2070H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in PHYS 1010 or CHEM 1110.
Prerequisite: (ENGL 1101 or MATH 1101) and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Occasional weekend field trips required.

(CHEM)HONS(BIOL)(GEOL)(PHYS) 2080H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in BTNY 1220 or BTNY 1220L or GEOL 1121.
Prerequisite: HONS (BIOL) (CHEM) (GEOL) (PHYS) 2070H and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Weekend field trips required.

CHEM 2100. Elementary Organic Chemistry. 3 hours.
Prerequisite: CHEM 1110 or CHEM 1211 or CHEM 1311H or CHEM 1411.
A brief one-semester introduction to organic chemistry, covering elementary aspects of nomenclature, structures, and common reactions of organic compounds.

CHEM 2100L. Elementary Organic Chemistry Laboratory. 1 hour. 3 hours lab per week.
Corequisite: CHEM 2100.
Students will perform experiments to illustrate the reactions, principles, and techniques presented in Elementary Organic Chemistry.

CHEM 2211. Modern Organic Chemistry I. 3 hours.
Not open to students with credit in CHEM 2100.
Prerequisite: CHEM 1211 or CHEM 1311H or CHEM 1411.
First semester of a two-semester sequence of organic chemistry for students majoring in sciences and for pre-medical, pre-dental, pre-pharmaceutical, and pre-veterinarial students.

CHEM 2211L. Modern Organic Chemistry Laboratory I. 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 2100L.
Corequisite: CHEM 2211.
Students will perform experiments to illustrate the reactions, principles, and techniques presented in Modern Organic Chemistry I.

CHEM 2212. Modern Organic Chemistry II. 3 hours.
Prerequisite: CHEM 2211.
Second semester of a two-semester sequence of organic chemistry for students majoring in sciences and for pre-medical, pre-dental, pre-pharmaceutical, and pre-veterinarial students.

CHEM 2212L. Modern Organic Chemistry Laboratory II. 1 hour. 3 hours lab per week.
Corequisite: CHEM 2212.
Students will perform experiments to illustrate the reactions, principles, and techniques presented in Modern Organic Chemistry II.

CHEM 2300. Quantitative Analytical Chemistry. 3 hours.
Prerequisite: CHEM 1212 or CHEM 1312H or CHEM 1412.
Quantitative analysis using statistical evaluation of data, gravimetric, volumetric, and selected instrumental methods, including spectrophotometry and separations.

CHEM 2300L. Quantitative Analytical Chemistry Laboratory. 1 hour. 3 hours lab per week.
Corequisite: CHEM 2300.
Selected quantitative analytical chemical topics, including gravimetric and volumetric methods, potentiometry, spectrophotometry, and separations.

CHEM 2311H. Advanced Organic Chemistry I (Honors). 3 hours.
Not open to students with credit in CHEM 2100 or CHEM 2211 or CHEM 2411.
Prerequisite: (CHEM 1212 or CHEM 1312H or CHEM 1412) and permission of Honors.
Corequisite: CHEM 2311L.
First semester of a two-semester sequence of organic chemistry for honors students covering advanced aspects of nomenclature, structures, and reactions of organic compounds.

CHEM 2311L. Advanced Organic Chemistry Laboratory I. 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 2100L or CHEM 2211L or CHEM 2411L.
Prerequisite: CHEM 1212L or CHEM 1312L or CHEM 1412L.
Corequisite: CHEM 2311H.
This is the first semester of a two-semester laboratory sequence of organic chemistry for honors students to accompany Advanced Organic Chemistry I (Honors).

CHEM 2312H. Advanced Organic Chemistry II (Honors). 3 hours.
Not open to students with credit in CHEM 2100 or CHEM 2212 or CHEM 2412.
Prerequisite: (CHEM 2211 or CHEM 2311H or CHEM 2411) and permission of Honors.
Corequisite: CHEM 2312L.
This is the second semester of a two-semester sequence of organic chemistry for honors students covering advanced aspects of nomenclature, structures, and reactions of organic compounds.

CHEM 2312L. Advanced Organic Chemistry Laboratory II. 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 2100L or CHEM 2212L or CHEM 2412L.
Prerequisite: CHEM 2211L or CHEM 2311L or CHEM 2411L.
Corequisite: CHEM 2312H.
This is the second semester of a two-semester laboratory sequence of organic chemistry for honors students to accompany Advanced Organic Chemistry II (Honors).

CHEM 2411. Advanced Organic Chemistry I. 3 hours.
Not open to students with credit in CHEM 2100 or CHEM 2211 or CHEM 2311H.
Prerequisite: CHEM 1212 or CHEM 1312H or CHEM 1412.
Corequisite: CHEM 2411L.
First semester of a two-semester sequence of organic chemistry for chemistry majors covering advanced aspects of nomenclature, structures, and reactions of organic compounds.

CHEM 2411L. Advanced Organic Chemistry Laboratory I. 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 2100L or CHEM 2211L or CHEM 2311L.

Prerequisite: CHEM 1212L or CHEM 1312L or CHEM 1412L.
Corequisite: CHEM 2411.
This is the first semester of a two-semester laboratory sequence of organic chemistry for chemistry majors to accompany Advanced Organic Chemistry I.

CHEM 2412. Advanced Organic Chemistry II. 3 hours.
Not open to students with credit in CHEM 2100 or CHEM 2212 or CHEM 2312H.
Prerequisite: CHEM 2211 or CHEM 2311H or CHEM 2411.
Corequisite: CHEM 2412L.
This is the second semester of a two-semester sequence of organic chemistry for chemistry majors covering advanced aspects of nomenclature, structures, and reactions of organic compounds.

CHEM 2412L. Advanced Organic Chemistry Laboratory II. 1 hour. 3 hours lab per week.
Not open to students with credit in CHEM 2100L or CHEM 2212L or CHEM 2312L.
Prerequisite: CHEM 2211L or CHEM 2311L or CHEM 2411L.
Corequisite: CHEM 2412.
This is the second semester of a two-semester laboratory sequence of organic chemistry for chemistry majors to accompany Advanced Organic Chemistry II.

CHEM 2600. Introduction to Research I. 1-4 hours. Repeatable for maximum 4 hours credit.
Prerequisite: CHEM 1211 or CHEM 1311H or CHEM 1411.
Students will pursue directed research with a chosen faculty member, and will prepare a written report of their research progress for credit.
Non-traditional format: Students are expected to spend four hours per week in the research laboratory for each hour of credit.

(CHEM)BCMB(BIOL) 3100. Introductory Biochemistry and Molecular Biology. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L.
The structure and function of biological molecules, enzymology, metabolism and bioenergetics, and recombinant DNA technology.

CHEM 3110. Fundamentals of Physical Chemistry. 3 hours.
Not open to students with credit in CHEM 3211.
Prerequisite: PHYS 1111-1111L and CHEM 2300 and MATH 2200.
A one-semester course which covers the basic concepts and techniques of physical chemistry. This course is designed for non-professional chemistry majors.

CHEM 3211. Modern Physical Chemistry I. 3 hours.
Prerequisite: CHEM 2300 and CHEM 2300L and MATH 2210 and PHYS 1212-1212L.
The first semester of a two-semester sequence covering basic concepts and techniques of physical chemistry. The level of coverage is designed for chemistry majors.

CHEM 3212. Modern Physical Chemistry II. 3 hours.
Prerequisite: CHEM 3211.
Prerequisite or corequisite: MATH 2500.
The second semester of a two-semester sequence covering basic concepts and techniques of physical chemistry. The level of coverage is designed for chemistry majors.

CHEM 3300. Modern Instrumental Methods of Analysis. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2300.
Prerequisite or corequisite: CHEM 2212.
Advanced topics in analytical chemistry. Fundamental principles of quantitative instrumental methods of analysis, including elementary aspects of instrumentation and signal processing; absorption, emission and scattering methods of optical spectrometry; mass spectrometry; electrochemistry; and separations.

CHEM 3400. Modern Inorganic Chemistry. 3 hours.
Prerequisite: CHEM 3110 or CHEM 3211.
Modern inorganic chemistry, including structure and bonding in solids, advanced concepts in periodicity, descriptive inorganic, organometallic, and bioinorganic chemistry.

CHEM 3511-3511L. Experimental Methods I. 3 hours. 1 hour lecture and 6 hours lab per week.
Prerequisite or corequisite: [BCMB(CHEM) 4110/6110 or CHEM 3110 or CHEM 3211] and CHEM 3300.
An integrated course incorporating elements of instrumental analysis, physical chemistry, and inorganic chemistry. Primary emphasis will be on fundamental aspects of each of the above disciplines.

CHEM 3512-3512L. Experimental Methods II. 3 hours. 1 hour lecture and 6 hours lab per week.
Prerequisite: CHEM 3511-3511L.
Prerequisite or corequisite: CHEM 3212 and CHEM 3400.
Inorganic chemistry, physical chemistry, and instrumental analysis. Synthesis and modern physical and chemical methods of characterization.

CHEM 3600. Introduction to Research II. 1-4 hours. Repeatable for maximum 4 hours credit.
Prerequisite: CHEM 2211.

Students will pursue directed research with a chosen faculty member, and will prepare a written report of their research progress for credit.
Non-traditional format: Students will spend four hours per week in the research laboratory for each hour of credit.

CHEM 4100. Special Topics in Organic Chemistry. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: CHEM 2212 and CHEM 2300.
Advanced concepts in organic chemistry will be presented, the detailed content varying from year to year.

(CHEM)BCMB 4110/6110. Physical Biochemistry. 3 hours.
Prerequisite: MATH 2210 or BCMB (BIOL) (CHEM) 3100 or BCMB 4010/6010.
Corequisite: BCMC(BIOL)(CHEM) 3100 or BCMB 4010/6010.
The principles of physical chemistry applied to biological molecules and systems, including current approaches in structural biology.

CHEM 4120. Chemistry of Drug Design and Drug Action. 3 hours.
Prerequisite: CHEM 2212.
The rational basis for drug design, discovery, and development, as well as the chemical and physical basis for drug action will be discussed. Topics will include structure-activity relationships, organic synthesis, organic mechanisms, mechanisms of action, metabolism, toxicity, computer-assisted drug design, case studies, history, and other fundamental topics.

CHEM (BCMB) 4190/6190. Introduction to NMR Spectroscopy. 3 hours. 2 hours lecture and 3 hours lab per week.
Instrumental aspects of NMR spectroscopy including pulsed Fourier transform techniques, proton and carbon-13 techniques used in the analysis of organic compounds, polypeptides and other small molecules. The focus is on the operation of NMR spectrometers presently available in the University of Georgia Chemistry Department.

CHEM 4200. Special Topics in Physical Chemistry. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: CHEM 2212 and CHEM 2300 and (CHEM 3110 or CHEM 3211).
Advanced concepts in physical chemistry will be presented, the detailed content varying from year to year.

CHEM 4300. Special Topics in Analytical Chemistry. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: CHEM 2212 and CHEM 3300.
Advanced concepts in analytical chemistry will be presented, the detailed content varying from year to year.

CHEM 4400. Special Topics in Inorganic Chemistry. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: CHEM 2212 and CHEM 2300 and CHEM 3400.
Advanced concepts in inorganic chemistry will be presented, the detailed content varying from year to year.

CHEM 4500. Scientific Information Acquisition and Dissemination. 3 hours.
Prerequisite: CHEM 2212 and CHEM 2300.
Modern information technology and its uses in accessing the chemical scientific literature. Computer- and web-based databases and search engines will be demonstrated. Students will receive hands-on training in presentation skills. The final project involves a written report, oral presentation, and web-page development.
Non-traditional format: Some lectures, demonstrations, and tutorials will be given in a master classroom with student access to workstations.

CHEM 4600. Independent Research. 4 hours.
Prerequisite: CHEM 2212 and CHEM 2300.
Students will pursue directed research with a chosen faculty member, and will prepare a written report of their research progress for credit.
Non-traditional format: Students will spend four hours in the research laboratory for each hour of credit.

CHEM 4960H. Directed Reading and/or Projects. 3 hours. 9 hours lab per week.
Prerequisite: CHEM 2211.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

CHEM 4970H. Directed Reading and/or Projects. 3 hours. 9 hours lab per week.
Prerequisite: CHEM 4960H.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

CHEM 4980H. Directed Reading and/or Projects. 3 hours. 9 hours lab per week.
Prerequisite: CHEM 4970H.
This course affords Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

CHEM 4990H. Honors Thesis. 3 hours. 9 hours lab per week.
Prerequisite: CHEM 4960H.
This course provides the opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

(CHFD) Child and Family Development

College of Family and Consumer Sciences, Department of Child and Family Development

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CHFD 2000. Introduction to Family and Consumer Sciences. 1 hour.
The specialties and professions comprising the fields in family and consumer sciences. Systems perspective is emphasized in examining quality of life issues. Discussions include the personal, professional, and technical elements involved in career development.

CHFD 2100. Development Within the Family. 3 hours.
Ecological approach to individual development and interpersonal relationships through consideration of family processes across the life span. Practice in application of principles.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CHFD 2200. Introduction to Life Span Development. 3 hours.
Physical, cognitive, social, and emotional development of individuals from conception to the end of life from ecological and life-span perspectives.

CHFD 2950-2950L. Introduction to Child Development. 3 hours. 2 hours lecture and 2 hours lab per week.
Physical, cognitive, social, and emotional development of children from birth through adolescence.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CHFD 2896. Guidance Practices in Educational Settings. 3 hours.
Effective guidance practices in group settings (PreK-5) based upon the applicaton of theoretical models. Focus will be given to individual, family, and cultural diversity. Various guidance models will be examined.

CHFD 3010. Special Problems in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Independent study and research.
Non-traditional format: Directed study.

CHFD 3110. Professional Development/Community Activities. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Career opportunities related to child and family development and preparation needed to enhance successful career development.
Non-traditional format: Individualized instruction organized as lectures and service learning experiences.

CHFD 3700. Adolescence and Young Adulthood Survey. 3 hours.
Prerequisite: CHFD 2950-2950L.
Adolescent and young adult development in the context of families. Special attention is given to the transactional nature of adolescent/young adult and family development, with application of theory and research to understanding problems associated with adolescence and early adulthood.

CHFD 3710. Midlife/Elder Years Survey. 3 hours.
Prerequisite: CHFD 2100 and CHFD 2950-2950L.
Individual and family development during middle and later years. Emphasis is on importance of physical, psychological, and social development within multigenerational relationships.

CHFD 3900. Prenatal and Infant Development. 3 hours.
Prerequisite: CHFD 2950-2950L.
Growth and development from conception to second year of life. Guidance of infants and toddlers within family and group care settings.

CHFD 3920. Issues in Family Systems. 3 hours.
Prerequisite: CHFD 2100.
Family processes and transition throughout the life span. Emphasis is on contemporary issues relevant to families.
Non-traditional format: This course is also offered through University System of Georgia Independent Study.

CHFD 3930. Development of Interpersonal Relationships. 3 hours.
Prerequisite: CHFD 2100 or PSYC 1101 or SOCI 1101.
Developmental approach to close relationships. Includes processes of attraction, interdependence, love, commitment, and conflict. A variety of close relationships is explored in various contexts, including friendships, romance, and family relationships.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

(CHFD)EDEC 4010. Orientation to Early Childhood Education. 1 hour.
Prerequisite: Permission of department.
Translation of theories about how children learn into ideas for application in the classroom. Bases for developmentally appropriate practices are examined in light of the students' own experiences as learners.

(CHFD)EDEC 4010L. Orientation to Early Childhood Education Laboratory. 1 hour. 1 hour lab per week.
Prerequisite: Permission of department.
Translation of theories about how children learn into ideas for application in the classroom. Bases for developmentally appropriate practices are examined in light of the students' own experiences as learners. Field experiences in classroom settings.

(CHFD)EDEC 4020. Decision Making for Planning, Teaching, and Organizing Early Childhood Classrooms. 3 hours.
Prerequisite: Permission of department.
Reflective decision making that incorporates the major themes, concepts, and skills involved in organizing, planning, and developing instruction in early childhood classrooms.

(CHFD)EDEC 4020L. Decision Making for Planning, Teaching, and Organizing Early Childhood Classrooms Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Reflective decision making that incorporates the major themes, concepts, and skills involved in organizing, planning, and developing instruction in early childhood classrooms. Field experiences in classroom settings.

(CHFD)EDEC 4030. Integrated Curricular Practices in Early Childhood Education. 3 hours.
Prerequisite: Permission of department.
Develop philosophical perspectives of teaching and classroom management, consider effective parent-teacher relations, and connect with the wider community as a resource context for teaching and learning. Plan and teach an integrated, thematic curriculum unit for prekindergarten through grade five as part of the field component.

(CHFD)EDEC 4030L. Integrated Curricular Practices in Early Childhood Education Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Develop philosophical perspectives of teaching and classroom management, consider effective parent-teacher relations, and connect with the wider community as a resource context for teaching and learning. Plan and teach an integrated, thematic curriculum unit for prekindergarten through grade five as part of the field component. Field experiences in classroom settings.

(CHFD)EDEC 4040. Special Topics in Early Childhood Education. 3 hours.
Corequisite: EDEC(CHFD) 5460.
A forum for issues of professionalism connected to professional teaching experiences. Topics may vary depending on student-generated issues and concerns.

CHFD 4080/6080. Advanced Human Development. 3 hours.
Prerequisite: Undergraduates only: CHFD 2950-2950L.
Theoretical perspectives and philosophical issues in human development across the life span from an interdisciplinary perspective. Special reference to techniques of child guidance.

CHFD 4090/6090. Advanced Infant Development. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: Undergraduate level only: CHFD 3900.
Emotional, social, cognitive, and physical development in infancy. Supervised observation in Infant Center and in selected homes.

CHFD 4120. Child Care, Work, and the Family. 3 hours.
Prerequisite: CHFD 2100 and CHFD 2950-2950L.
A developmental-contextual analysis of child care, work, and family functioning. Examination of current child care arrangements to work roles in families, historical and cross-cultural comparisons of child care and family work patterns, and the developmental impact of child care and work on family members. Policy implications discussed.

CHFD 4130/6130. Family Policy. 3 hours.
Prerequisite: CHFD 2100 and CHFD 2950-2950L.
Relevance of government and business policies to the lives of children and families. Assessment of the influence of policies using criteria drawn from the field of child and family development.

CHFD 4330. Diversity in Human Development and Family Systems. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Variability in family development, organization, identity structure, and values with an emphasis on culture, gender, race, ethnicity, sexual orientation, and physical characteristics of family members.

CHFD(HACE) 4500/6500. Aging and the Family. 3 hours.
Prerequisite: Junior standing or permission of department.
Review of theory, research, and methodology on

aging and the family. Emphasis rests with identifying current concepts and controversies, and diversity in the experiences of families and aging individuals.

CHFD 4600/6600. Social Ecological Perspectives on Adult Development and Aging. 3 hours.
Prerequisite: CHFD(HACE) 4500/6500.
Reviews theory and research on development from mid-life through advanced old age. Focus is on the changing individual in a social context, including social development, social cognition, and aging.

CHFD(SOCI) 4610/6610. The Family. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Family study utilizing data from the fields of anthropology, individual and social psychology, history, sociology, economics, and psychiatry.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CHFD 4620/6620. Women in the Family and Society. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Women's experiences and gender issues in relation to family and individual development. Research and policy implications are examined.

CHFD 4700/6700. The Family and Adolescence. 3 hours.
Prerequisite: Undergraduate level only: CHFD 3700.
Advanced consideration of unique features of the family that includes an adolescent member. Special attention is given to dual processes of adolescent development and family development.

CHFD 4810/6810. Hospitalized Child and the Family. 3 hours.
Prerequisite: Undergraduate level only: CHFD 2100 and CHFD 2950-2950L and permission of department.
Developmental and psychosocial issues of hospitalized children and their families. Organization and services in health care settings investigated.

CHFD 4850/6850. Family Development. 3 hours.
Prerequisite: Undergraduate level only: CHFD 2100 or SOCI 1101.
Families as social groups that develop their own patterns, meanings, and processes across family life cycle in both conventional and alternative family forms.

CHFD 4860/6860. Parent Education and Child Guidance. 3 hours.
Prerequisite: Undergraduate level only: CHFD 2100 and CHFD 2950-2950L.
Application of theory, research, and developmental practice to understanding the role of parents, teachers, and community leaders in guiding the behavior of children from birth through adolescence, and to establishing mutually satisfying parent-child relationships through the life cycle. Programs for parents and parental interactions with schools and other social institutions.

CHFD 4870/6870. Human Sexuality Across the Life Span. 3 hours.
Prerequisite: Undergraduate level only: CHFD 2100.
Attitudes toward and values associated with human sexuality, based on substantive and theoretical information, with emphasis on how development and interactions across the life span are affected by familial, social, cultural, and psychological factors.

CHFD 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

CHFD 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

CHFD 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

CHFD 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in Child and Family Development or a closely related field.
Non-traditional format: Individual research with a faculty member.

CHFD 5100. Family Intervention. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Theoretical concepts and behavioral skills as applied to the intervention process with help-seeking individuals and families.

CHFD 5110. Research Methods in Child and Family Development. 3 hours.
Prerequisite: Senior standing or permission of department.
The evaluation of research in the field of Child and Family Development and common problems incurred in applied research which affect the interpretation of data.

CHFD 5120/7120. Observation and Assessment Techniques. 3 hours.
Prerequisite: Undergraduate level only: CHFD 2950-2950L.
Directed experiences in observing, recording, and assessing behavior and interaction among children and families, and examination of program assessment.

CHFD 5130/7130. Creative Activities for Young Children. 3 hours.
Prerequisite: CHFD 4860/6860.
Quality individual and group programming for young children based upon current theory, research, and developmentally appropriate practice. Special emphasis will be placed upon the integration of creative activities including art, music, movement, nutrition, health, dramatic play and computer applications.

CHFD 5140/7140. Group Programs for Young Children. 9 hours. 5 hours lecture and 16 hours lab per week.
Prerequisite: Undergraduate level only: CHFD 3900.
Developmental and educational theories applied to the design, content, and implementation of group programs for young children.

CHFD(EDEC) 5150. Families, Schools, and Communities. 3 hours.
Prerequisite: EDEC(CHFD) 4020 and CHFD 4860/6860 and permission of department
Families and their relationship with schools and communities. Implications for selected areas of practice, such as early childhood educational practices, emphasized.

CHFD 5160L/7160L. Administration of Children's Programs. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: CHFD 4860/6860 and CHFD 5140/7140.
Theories and administration of child care programs. Topics include planning, scheduling, enrollment, certification, and evaluation. Laboratory work required.

(CHFD)EDEC 5460. Student Teaching in Early Childhood Education. 3-15 hours.
A prekindergarten through grade five classroom teaching experience under the direction of a teacher and an early childhood education faculty member.
Non-traditional format: Student teaching/field based in schools.

CHFD 5710/7710. Study Tour in Child and Family Development. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Selected topics in child and family development. Combined with site visits to relevant locations.
Non-traditional format: Lecture, tour, and other activities for the length of the program.

CHFD 5900/7900. Preinternship Orientation. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Junior or senior standing or permission of department.
Orientation to and preparation for doing an internship.

CHFD 5910/7910. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Supervised professional practice in settings with employed persons with a degree in Child and Family Development or related field.
Non-traditional format: Internship.

CHFD 5920/7920. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Supervised professional practice in programs for children under six with employed persons with a degree in Child and Family Development or related field.
Non-traditional format: Internship.

CHFD 5930/7930. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Supervised professional practice in human development programs with employed persons with a degree in Child and Family Development or related field.
Non-traditional format: Internship.

CHFD 5940/7940. Internship in Child and Family Development. 1-12 hours.
Prerequisite: Permission of department.
Supervised professional practice in special needs programs with employed persons with a degree in Child and Family Development or related field.
Non-traditional format: Internship.

CHFD 5950/7950. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.

Supervised professional practice in administrative programs with employed persons with a degree in Child and Family Development or related field.
Non-traditional format: Internship.

CHFD 5960/7960. Internship in Child and Family Development. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: CHFD 5900/7900 and permission of department.
Supervised professional practice in Child Life programs with employed persons with a degree in Child and Family Development or related field.
Non-traditional format: Internship.

(CHNS) Chinese

College of Arts and Sciences, Department of Comparative Literature

CHNS 1001. Elementary Chinese I. 4 hours.
Fundamentals of grammar, pronunciation, composition, and conversation.

CHNS 1002. Elementary Chinese II. 4 hours.
Prerequisite: CHNS 1001.
A continuation of Elementary Chinese I.

CHNS 2001. Intermediate Chinese I. 3 hours.
Prerequisite: CHNS 1002.
Intermediate grammar, reading, conversation, and composition.

CHNS 2002. Intermediate Chinese II. 3 hours.
Prerequisite: CHNS 2001 or permission of department.
A continuation of Intermediate Chinese I.

CHNS 3010. Advanced Chinese I. 3 hours.
Prerequisite: CHNS 2002 or permission of department.
Advanced grammar, reading, conversation, and composition.

CHNS 3020. Advanced Chinese II. 3 hours.
Prerequisite: CHNS 3010 or permission of department.
A continuation of Advanced Chinese I.

CHNS 3990. Directed Study in Chinese Language and/or Literature. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent study and research under the direction of individual faculty members.
Non-traditional format: Directed study.

(CLAS) Classical Culture

College of Arts and Sciences, Department of Classics

CLAS 1000. Greek Culture. 3 hours.
Not open to students with credit in CLAS 1000H.
The characteristics of Greek literature and culture, taught principally through translations of selections from Greek authors.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CLAS 1000H. Greek Culture (Honors). 3 hours.
Not open to students with credit in CLAS 1000.
Prerequisite: Permission of Honors.
The characteristics of Greek literature and culture, taught principally through translations of selections from Greek authors.

CLAS 1010. Roman Culture. 3 hours.
Not open to students with credit in CLAS 1010H.
The characteristics of Roman literature and culture, taught principally through translations of selections from Roman authors.

CLAS 1010H. Roman Culture (Honors). 3 hours.
Not open to students with credit in CLAS 1010.
Prerequisite: Permission of Honors.
The characteristics of Roman literature and culture, taught principally through translations of selections from Roman authors.

CLAS 1020. Classical Mythology. 3 hours.
Not open to students with credit in CLAS 1020H.
The myths and sagas of the Greeks and Romans, taught in particular through ancient literature.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CLAS 1020H. Classical Mythology (Honors). 3 hours.
Not open to students with credit in CLAS 1020.
Prerequisite: Permission of Honors.
The myths and sagas of the Greeks and Romans, taught in particular through ancient literature.

CLAS 1030. Medical Terminology. 3 hours.
Medical terminology derived from Greek and Latin, concentrating on the meanings of the components of medical terms and the principles that govern their arrangement, with some attention to the history of ancient medicine.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CLAS(ANTH) 2000. Introduction to Classical Archaeology. 3 hours.
Concepts and principles of archaeology, including site formation, survey and excavation techniques, artifact retrieval and analysis, chronology, archaeological theory, and contemporary issues such as "ownership" of the past; focus on sites from Greek and Roman antiquity.

CLAS (LING) 2010. The Nature of the English Vocabulary. 3 hours.
The nature and composition of the English vocabulary, with particular attention to Greek and Latin elements, and its development among diverse cultures and societies; techniques of morphological analysis, allomorphy, derivational morphology, formal and semantic change, and Indo-European etymology.

(CLAS) HIST 3310. Ancient History. 3 hours.
The political and economic world from the Stone Age to the end of the Western Roman Empire in 476 A.D.

(CLAS) HIST 3311. History of Ancient Greece. 3 hours.
Not open to students with credit in (CLAS) HIST 4311/6311.
From the foundations of Greek civilization through the conquests of Alexander the Great. Warfare and imperialism, the Greek city-state, and the origins of democracy will be covered, as well as topics in social and cultural history — law, the role of women, the economy, the naturalist tradition in art, and the public architecture of Athens.

(CLAS)HIST 3312. Roman History. 3 hours.
Ancient Rome from its mythical foundation to the conversion of Constantine. The rise and fall of the Roman empire, including its great wars and political struggles; also topics in social and cultural history, such as Roman values and national identity, life in the empire's provinces, and the roles of women in society.

(CLAS) HIST 3321. History of Women in the Ancient World. 3 hours.
The history of women in many of the ancient civilizations of the Mediterranean and Middle East. The social, religious, and political roles played by women of different classes within the patriarchal framework of these societies. Emphasis will be placed on the reading and discussion of primary sources.

CLAS 4010/6010. Archaic Greece. 3 hours.
Prerequisite: CLAS 1000 or CLAS 1020 or HIST 3250 or HIST 4311/6311 or permission of department.
The expanding world of Greek culture in the period from 750 to 480 BC, including consideration of the many new and influential developments in art, literature, history, political science, and philosophy, and their interrelationships.

CLAS 4020/6020. Greek Sanctuaries and Festivals. 3 hours.
Prerequisite: CLAS 1000 or HIST 3250 or HIST 3310 or HIST 4311/6311 or HIST 4312/6312 or permission of department.
The major Greek sanctuaries and their physical remains, and the Greek religious calendar and its important festivals, including the Olympic Games and the Panathanaia.

CLAS 4030/6030. The Archaeology of the Greek Colonies. 3 hours.
Prerequisite: CLAS 1000 or HIST 2301 or HIST 3250 or HIST 4311/6311 or HIST 4312/6312 or ARST 2310 or permission of department.
The archaeology of the Greek colonies in Ionia, Magna Graecia, and the Black Sea area is examined to identify and explain the combination of Greek and indigenous cultures in these areas on the fringes of the Greek world.

CLAS 4040/6040. The Hellenistic World. 3 hours.
Prerequisite: CLAS 1000 or HIST 3250 or HIST 4311/6311 or HIST 4321/6321 or HIST 4322/6322 or permission of department.
Archaeology, art, culture, and history of Greece and the East from the rise of Alexander to Rome's annexation of Egypt.

CLAS 4100/6100. Ancient Cities of Greece and Rome. 3 hours.
Prerequisite: CLAS 1000 or CLAS 1010 or permission of department.
Selected Greek and Roman cities and their architecture; principles upon which they are planned and laid out. Theories of Hippodamus and others, and the writings of Vitruvius. Detailed study of the topography of Athens and Rome.

CLAS 4110/6110. The Etruscans and Early Rome. 3 hours.
Prerequisite: CLAS 1010 or HIST 3250 or HIST 4321/6321 or permission of department.
The art and culture of the people of Northern Italy known as the Etruscans, with special attention to their relationship with the Greek world and their role in the development of Rome as a city.

CLAS 4120/6120. Pompeii and Herculaneum: The Buried Cities. 3 hours.
Prerequisite: CLAS 1010 or HIST 3250 or HIST 4321/6321 or permission of department.
Pompeii, Herculaneum, and the area destroyed by the eruption of Mt. Vesuvius. Concentration will be on political, social, religious, and economic life, combined with a study of the painting, sculpture, and architecture of the excavated cities and villas.

CLAS 4130/6130. The Archaeology of Rome's Provinces. 3 hours.
Prerequisite: CLAS 1010 or CLAS(ANTH) 2000 or permission of department.
The archaeology of the Western and/or Eastern provinces of the Roman Empire, concentrating on the major cities and sanctuaries and their physical remains.

CLAS 4140/6140. Archaeology of Punic and Roman Carthage. 3 hours.
Prerequisite: CLAS 1000 or CLAS(ANTH) 2000 or permission of department.
Corequisite: CLAS 4150/6150.
The civilization of Roman North Africa from the Punic period through the Arab Conquest, using the important city of Carthage as a model.
Non-traditional format: Open only to students participating in the University's Carthage excavation.

CLAS 4150/6150. Practicum in Classical Archaeology. 3 hours.
Prerequisite: CLAS 1010 or CLAS(ANTH) 2000 or permission of department.
Corequisite: CLAS 4140/6140.
All aspects of modern field archaeology on a classical site, including excavation techniques, the keeping of field records, and the classification and conservation of finds from the moment of recovery to their final disposition in museums.
Non-traditional format: Open only to students participating in the University's Carthage excavation.

CLAS 4200/6200. Ancient Comedy. 3 hours.
Prerequisite: CLAS 1000 or CLAS 1010 or CLAS 1020 or permission of department.
Ancient comedy in English translation, concentrating on fifth-century Athens, and tracing its changing focus through Menander to Plautus and Terence; also considered will be the theoretical basis of comedy as discussed by Aristotle and others, as well as the place of comedy within the history of genres.

CLAS 4210/6210. Ancient Tragedy. 3 hours.
Prerequisite: Permission of department.
The conventions of classical tragedy as exemplified in the plays (in English translation) of the Greek dramatists Aeschylus, Sophocles, and Euripides, as well as the Roman tragedian Seneca.

CLAS 4220/6220. Roman Epic Poetry. 3 hours.
Prerequisite: CLAS 1010 or HIST 3250 or HIST 4321/6321 or HIST 4322/6322 or permission of department.
The epic poetry of ancient Rome with special emphasis on Ennius, Vergil, and Lucan. The historical background of epic will be examined and the poems will be read in English translation, some attention being given to Renaissance and modern translations.

(CLAS)HIST 4225/6225. Medicine, Healing, and the Body in Ancient Greece and Rome. 3 hours.
The origins of the rationalist tradition in medicine; folk and cult methods of healing; the medical construction of gender differences; attitudes toward the body, including asceticism; and topics in the social history of medicine (such as childbirth, disease, and medical society) will be explored.

CLAS 4230/6230. Classical Rhetoric. 3 hours.
Prerequisite: CLAS 1000 or CLAS 1010 or SPCM 1100.
Classical rhetoric, with special attention to Plato, Aristotle, and Cicero.

CLAS 4240/6240. Theory and Analysis of Classical Mythology. 3 hours.
Prerequisite: CLAS 1000 or CLAS 1010 or CLAS 1020 or permission of department.
The interpretation and analysis of ancient myths, particularly those of Greece and Rome.

CLAS 4250/6250. Ancient Novel. 3 hours.
Prerequisite: CLAS 1000 or CLAS 1010 or CLAS 1020 or permission of department.
Ancient prose fiction (in English translation), including the Latin novels of Petronius and Apuleius and examples of the Greek novel. Topics include the relationship between the novel and other literary genres, the social and intellectual background of the authors, the themes of love, travel, and magic, and the novel's audience. Course may be taken through UGA Studies Abroad program in Classics in Rome.

CLAS 4300/6300. Selected Topics in Ancient Civilization. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: CLAS 1000 or CLAS 1010 or permission of department.
Special topics in the civilization of Greece and Rome. Topics will vary as demand requires.

CLAS 4310. Directed Readings in Classical Culture. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Individual study, reading, or projects under the direction of a faculty project director.
Non-traditional format: Directed study.

(CLAS) HIST 4312/6312. The Hellenistic World. 3 hours.
Problems in Hellenistic history from 330 B.C. to the Roman conquest with emphasis on the Antigonid, Seleucid, and Ptolemaic dynasties.

(CLAS)HIST 4320/6320. Law and Society in the Greco-Roman World. 3 hours.
Law and its functions in ancient society from archaic Greece through the fifth century A.D. Includes discussion of Greek, Roman, and Christian legal codes, legal procedure, and the theory of law; also of law as a source for social history, especially issues of gender, class, crime, and the ancient economy.

(CLAS) HIST 4321/6321. The Roman Republic. 3 hours.
Roman history to the end of the republic.

(CLAS) HIST 4322/6322. The Roman Empire. 3 hours.
History of the Roman Empire from 27 B.C. to A.D. 337 with special emphasis on the government of Augustus, reasons for its decline, and the final attempt at unification of the empire under Constantine.

(CLAS)HIST 4329/6329. Studies in Ancient Greek and Roman History. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Junior or senior standing.
Topics in ancient history that vary by year and instructor. Subject matter may include, for example, "The Hellenistic World"; "The Social History of the Roman Empire"; "Late Antiquity."

(CLAS) LING 4610/6610. Sanskrit I. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
The phonology, morphology, and syntax of the classical Sanskrit language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

(CLAS) LING 4620/6620. Sanskrit II. 3 hours.
Prerequisite: LING(CLAS) 4610/6610.
Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

CLAS 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the supervision of a project director.
Non-traditional format: Directed study.

CLAS 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the supervision of a project director.
Non-traditional format: Directed study.

CLAS 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the supervision of a project director.
Non-traditional format: Directed study.

CLAS 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field or a closely related field.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

(CMLT) Comparative Literature

College of Arts and Sciences, Department of Comparative Literature

(CMLT)HONS 2010H. Honors Humanities. 6 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of Honors.
Concepts integrating literature and the fine arts through lectures, seminars, individual research or projects, and writing.
Non-traditional format: Discussion sections will include writing and critiquing papers, and student presentations. May be offered daily during May session, or as part of a Study Abroad program.

(CMLT)HONS 2020H. Honors Humanities. 6 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of Honors.
Concepts integrating literature and the fine arts through lectures, seminars, individual research or projects, and writing.
Non-traditional format: Discussion periods include writing and critiquing papers, and students presentations

(CMLT)AFST(ANTH)(GEOG)(HIST)(SOCI) 2100. Introduction to Africa. 3 hours.
The history, physical environment (landforms, vegetation, and climate), and sociocultural environment (artistic, political, and social development) of Africa.

CMLT 2111. World Literature I. 3 hours.
World literature from antiquity to the seventeenth century.

CMLT 2210. Western World Literature I. 3 hours.
Western World Literature from Homer to the seventeenth century.

CMLT 2212. World Literature II. 3 hours.
World literature from the seventeenth century to the present.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CMLT 2220. Western World Literature II. 3 hours.
Western World Literature from the seventeenth to twentieth century.

CMLT 2250H. Western World Literature I (Honors). 3 hours.
Not open to students with credit in CMLT 2210.
Western World Literature from Homer to the twentieth century.

CMLT 2260H. Western World Literature II (Honors). 3 hours.
Not open to students with credit in CMLT 2220.
Western world literature from the seventeenth century to the twenty-first century.

CMLT 2270H. World Literature I (Honors). 3 hours.
Prerequisite: Permission of Honors.
World literature from antiquity to the seventeenth century.

CMLT 2280H. World Literature II (Honors). 3 hours.
Prerequisite: Permission of Honors.
World literature from the seventeenth century to present.

CMLT 2400. Asian-American Literature. 3 hours.
Works of literature by Asian-American writers, including works written in English and translations of works originally written in Asian languages.

CMLT 2410H. Asian-American Literature (Honors). 3 hours.
Prerequisite: Permission of Honors.
Works of literature by Asian-American writers, including works written in English and translation of works originally written in Asian languages.

CMLT 2500. Comparative Ethnic American Literatures. 3 hours.
A comparative study of ethnic literatures in the United States, including African-American, Arabic-American, Asian-American, Hispanic-American, Jewish-American, and Native-American literatures.

CMLT(AFAM) 2600. Multicultural Black Diaspora Literature. 3 hours.
Prerequisite: ENGL 1102.
Multicultural literature of the world-wide dispersion of Africans and people of African descent based on select representative works of African-American, African-Caribbean, and African literature.

CMLT 3000. Masterpieces of the Indian Tradition. 3 hours.
Prerequisite or corequisite: CMLT 2111 or CMLT 2270H or CMLT 2210 or CMLT 2280H or CMLT 2212 or CMLT 2220 or CMLT 2250H or CMLT 2260H.
The major literary works of ancient India up to the medieval period.

(CMLT)HONS 3010H. Honors Research Methods. 1-3 hours.
Prerequisite: Permission of Honors.
Research methods in the Arts and Humanities to enhance directed study participation and Honors thesis/project preparation.
Non-traditional format: Weekly seminars focus on individual student research designs. May be held during May session as daily seminars.

CMLT 3100. Speculative Fiction. 3 hours.
Prerequisite: ENGL 1102.
Historical and thematic treatment of fictional speculation about scientific matters from the dialogues of Plato to the contemporary science fiction of Vonnegut.

CMLT 3110. Literature of the Self. 3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: ENGL 1102.
Comparative study of the self as presented in literature of the first person (such as lyric poetry and autobiography) with particular emphasis on questions of genre, rhetoric, and poetics.

CMLT 3140. Women Writers. 3 hours.
Prerequisite: ENGL 1102.
World literature represented by women writers from the seventh century B.C. through the seventeenth century A.D.

CMLT (AFST) 3150. Introduction to Modern African Literature. 3 hours.
Prerequisite: ENGL 1102.
The literature of twentieth-century Africa in translation with emphasis on the African novel.

CMLT 3160. Myth and Oral Tradition. 3 hours.
Prerequisite: ENGL 1102.
A discussion of twentieth-century literary works (emphasis on narrative and drama) dealing with the reinterpretation of ancient classical myths, inclusive of English, American, Italian, French, German, and Russian Literatures.

CMLT 3170. Detective Fiction. 3 hours.
Prerequisite: ENGL 1102.
The evolution of the mystery story in the United States, England, and Europe, based on readings from such masters of the genre as Poe, Doyle, Christie, Simenon, Hammett, Chandler, et al. All readings in English.

CMLT(ANTH) 3180. Introduction to East Asian Cultures. 3 hours.
Cultures of China, Japan, Korea, and Vietnam, with emphasis on the formation of Chinese culture and its diffusion and variation within the other national groups.

CMLT(ANTH) 3190. Myth in Culture. 3 hours.
Literary and anthropological approaches to the study of myth in culture.

CMLT 3200. Contemporary Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ENGL 1102.
Selected works of contemporary world literature, with emphasis on works from Eastern Europe, the Middle East, Asia, Africa, and Latin America.

CMLT 3210. Ecocriticism. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ENGL 1030 or ENGL 1050H or ENGL 1060H or ENGL 1101 or ENGL 1102.
The exploration of a culture's conceptions of nature—and the social implications— through examination of texts of literature and other discourses. Course may focus on either Western or non-Western societies.

CMLT 3220. Women and Writing in East Asia. 3 hours.
Prerequisite: ENGL 1102.
This course addresses issues related to women in East Asia from comparative perspectives by examining how they are represented and how they choose to represent themselves in literary texts, film, and sociological material.

CMLT 3250. Children's Literature. 3 hours.
Prerequisite: Permission of department.
Selected works written for children from antiquity to the nineteenth century. Special emphasis on historical, cultural, religious, social, and linguistic contexts.

CMLT 3990. Directed Study in Comparative Literature. 3 hours.
Prerequisite: Permission of department.
Independent study and research under the direction of individual faculty members.
Non-traditional format: Directed study.

CMLT 4010. Approaches in Comparative Literature. 3 hours.
Prerequisite: Permission of department.
The methods and literary theories encompassed by the discipline of Comparative Literature.

(CMLT)HONS 4010H. Special Problems Seminar in Humanities. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the Humanities which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

CMLT 4020. Senior Seminar in Comparative Literature. 3 hours.
The capstone course for the undergraduate major in comparative literature, focusing on a particular theme, methodology, theory or problem.

(CMLT)HONS 4020H. Special Problems Seminar in Humanities. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the Humanities which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

CMLT 4050/6050. Literature and Ideas of Nature. 3 hours. Repeatable for maximum 6 hours credit.
Literary and philosophical texts of various historical periods that trace changes in how human beings understand their non-human environment.

CMLT 4070/6070. Renaissance European Literature. 3 hours.
Literature of Western Europe (Italian, French, Spanish, Germanic, and English) 1450-1600, with emphasis on literary types and prevailing ideas.

CMLT 4080/6080. Romantic European Literature. 3 hours.
The rise and development of Romanticism in the eighteenth and nineteenth centuries, with reading of selected literature and criticism.

CMLT 4090/6090. Poetry. 3 hours.
Lyric poetry from the mid-nineteenth century to the present.

CMLT 4100/6100. Mannerist and Baroque Literature. 3 hours.
Literary forms and issues in Europe ca. 1550-1700, with special attention to the intellectual background and the interrelationships between literature and other arts and sciences.

CMLT 4110/6110. Medieval European Literature. 3 hours.
The literatures of medieval Europe with emphasis on major literary genres and the philosophical and social presuppositions which inform them.

CMLT 4120/6120. Eighteenth-Century European Literature. 3 hours.
The literature of England, France, and Germany in the eighteenth century, with emphasis on literary types and prevailing ideas.

CMLT 4150/6150. The Novel. 3 hours.
The novel as a genre. Origins of prose fiction, theory of the novel, and representative readings of novels from the sixteenth through the twentieth centuries will be included.

CMLT 4200/6200. Literature and the Visual Arts. 3 hours.
Formal, philosophical, and thematic relationships between literature and one or more of the visual arts in a given period.

CMLT 4210/6210. Literature and Cinema. 3 hours. Repeatable for maximum 6 hours credit.
Formal, philosophical, and thematic relationships between literature and cinema.

CMLT 4220/6220. East Asian Cinema. 3 hours.
A survey of major works of East Asian cinema from literary, historical, cultural, and interdisciplinary perspectives.

CMLT 4230/6230. African Cinema. 3 hours.
Prerequisite: ENGL 1030 or ENGL 1101 or ENGL 1102 or ENGL 1050H or ENGL 1060H.
Introduction to African cinema as a prolongation of both oral and written African literature. An analysis of selected films shall reveal the usage of African "aesthetics of narration," which shall lead to a better understanding of the discourse of African literatures written in European languages.

CMLT (ANTH) 3240. The Gypsies: Last Nomads of the Modern World. 3 hours.
The Roma tribes of Central and Eastern Europe, including their cultures, customs, languages, literature, and music.

CMLT (ANTH) 3241. Minorities in Europe. 3 hours.
Anti-semitism and anti-Roma sentiments and practices in Central and East Europe. How the European Union is addressing this problem and future prospects for these minorities at risk.

CMLT 4250/6250. Drama. 3 hours.
Drama as a genre from its beginnings to the present.

CMLT 4300/6300. Modernism and Post-modernism. 3 hours.
Modernism and postmodernism as literary movements, with reading of selected literature and criticism.

(CMLT)RELI 4307/6307. Comparative Islamic Literature. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The major genres of Islamic literature and its principle concepts, covering Qur'anic, hadith, legal and political literature, philosophy, theology, historiography, hagiography, and poetry, emphasizing the Medieval period and mystical prose and poetry primarily in Arabic, Persian, and Turkish. The works will be in English translation. A writing intensive course.

CMLT 4350/6350. Nineteenth-Century Literature. 3 hours.
Readings in major writers and works of nineteenth-century European and world literature.

CMLT 4400/6400. East Central European Literature and Culture. 3 hours.
The works of major modern East Central European writers, with some attention to representative cinema.

CMLT 4510/6510. Literature and Music. 3 hours.
The forms, relationships, and aesthetics of music and literature.

CMLT 4600/6600. Survey of East Asian Literature I. 3 hours.
Poetry, prose, and drama in traditional China and Japan. The works will be in English translation.

CMLT 4610/6610. Survey of East Asian Literature II. 3 hours.
Poetry, prose, and drama in China and Japan from the nineteenth and twentieth centuries. The works will be in English translation.

CMLT 4620/6620. East Asian Novel. 3 hours.
The major/minor novelists and their works, especially those of the nineteenth and twentieth centuries. The novels are in English translation.

(CMLT)LING 4740/6740. Discourse Analysis. 3 hours.
Prerequisite: LING 2100 or permission of department.
An interdisciplinary study of language use, text analysis, and evaluation. The course will provide students with the ability to investigate and evaluate structural features of language and to identify the strategies used by different writers based on style and cultural backgrounds.

(CMLT)LING 4870/6870. Language, Gender, and Culture. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
The role of language and culture in the formation

of philosophical assumptions about gender differentiation in society.

CMLT 4875/6875. The African Diaspora. 3 hours.
Prerequisite: ENGL 1030 or ENGL 1102 or ENGL 1050H or ENGL 1060H.
Exploration of creative works by younger Africans whose primary socialization took place in Europe (Great Britain, France, Germany) and in the United States. Their contribution to African culture as well as to Western cultural life in the Western World.

CMLT (AFST) 4880/6880. Survey of African Literature I. 3 hours.
African literature from its ancient oral traditions to the European colonial period based on works of African authors written in English and English translations of the African works.

CMLT (AFST) 4890/6890. Survey of African Literature II. 3 hours.
African literature since the independence of the African people from European colonial rule.

CMLT 4895/6895. Francophone/Lusophone African Literature in English Translation. 3 hours.
Prerequisite: ENGL 1030 or ENGL 1102 or ENGL 1050H or ENGL 1060H.
Survey of modern African literatures in French and/or Portuguese language with focus on the novel.

CMLT 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.

CMLT 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the guidance of a project director.

CMLT 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field or in a closely related field under the guidance of a project director.

(CMSD) Communication Sciences and Disorders

College of Education, Department of Communication Sciences and Disorders

CMSD 4000. Special Problems in Communication Sciences and Disorders. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Adaptation of the Communication Sciences and Disorders curriculum to meet students' individual needs: supervised or directed reading, research, or clinical experiences.
Non-traditional format: Students work independently under the direction of a faculty member. Meetings between students and supervising faculty are arranged independently.

CMSD 4090/6090. Introduction to Phonetics. 2 hours. 1 hour lecture and 1 hour lab per week.
Prerequisite: Permission of department.
Identification, discrimination, and IPA transcription of segmental and supra-segmental elements of American English. Emphasis on branches of phonetics; classification schemes; narrow transcription of variants associated with regional dialects, speech disorders, and non-native pronunciations; dialects as manifestations of cultural diversity.

CMSD(LING) 4120/6120. Anatomy and Physiology of Speech, Voice, and Hearing. 3 hours.
Prerequisite: Permission of department.
Anatomical structures and basic physiological functions underlying audition, respiration, phonation, articulation, resonance, and swallowing.

CMSD 4130/6130. Language Science. 3 hours.
Prerequisite: Permission of department.
Components and structures of language, including analysis of sentences. Language variation and bilingualism.

CMSD(LING) 4140/6140. Introduction to Speech and Voice Science. 3 hours.
Prerequisite: CMSD 4090/6090 and CMSD(LING) 4120/6120 and PSYC 1101 and (MATH 1101 or PHYS 1010 or permission of department).
Application of basic physical principles to production and perception of speech and voice. Biomechanics of vocal fold oscillation; acoustics of voice source; resonance; acoustic phonetics; psychoacoustics of speech and voice. Interpretation of objective measures and outputs of computational models.

CMSD 4150/6150. Hearing Science. 3 hours.
Prerequisite or corequisite: CMSD(LING) 4120/6120 or permission of department.
Physics of sound and the physiological and psychological bases of auditory function.

CMSD 4160/6160. Intermediate Speech and Voice Science: Clinical Applications. 3 hours.
Prerequisite: (CMSD(LING) 4140/6140 and CMSD 4150/6150 and CMSD 4530 and CMSD 6600) or permission of department.
Application of recent theory and objective measurement techniques to assessment and intervention in speech pathology. Readings include research

articles in the "sciences" of speech and voice. Informal laboratory demonstrations and hands-on activities as class size permits. Designed for beginning master's level speech-language pathology majors on a non-thesis track.

CMSD(LING) 4500/6500. Study of Language Development. 3 hours.
Prerequisite: Permission of department.
Normal development of children's reception, integration, and expression of linguistic information; cultural, gender, socioeconomic, cognitive, and prelinguistic influences on language development.

CMSD 4520. Language Disorders of Children. 3 hours.
Prerequisite: CMSD(LING) 4500/6500 or permission of department.
Etiology and pragmatic, semantic, syntactic, and morphologic characteristics of children's language disorders; emphasis on various exceptional populations. Field observations and analyses of children with language disorders.

CMSD 4530. Speech Disorders. 3 hours.
Prerequisite: CMSD(LING) 4140/6140 or permission of department.
Etiology and characteristics of articulation, phonological, voice, fluency, and acquired motor speech disorders. Field observations of children or adults with speech disorders.

CMSD 4710. Introduction to Audiology. 3 hours.
Prerequisite: (CMSD(LING) 4120/6120 and CMSD 4150/6150) or permission of department.
Applying the basic physics of sound to the measurement of hearing; introduction to the pathologies of hearing; hearing loss associated with pathologies; medical and/or rehabilitation strategies.

CMSD 4730/6730. Psychosocial Characteristics of Deafness. 3 hours.
Prerequisite: CMSD 4710 or permission of department.
Development, adjustment, and educational needs of deaf individuals. Cognitive, personality, and socioemotional development; aptitudes, special abilities, and cultural perspectives.

CMSD 4800/6800. Neural Bases of Speech, Language, and Hearing. 3 hours.
Prerequisite: Permission of department.
Neuroanatomy and neurophysiology of speech, language, and hearing from a communication science perspective.

CMSD 4810/6810. Basic Sign Language. 3 hours.
Prerequisite: Permission of department.
History and description of sign language systems. Practice in expressive and receptive use of sign language and finger spelling.

CMSD 5000. Basic Clinical Procedures in Communication Sciences and Disorders. 1 hour. 1 hour lecture and 4 hours lab per week.
Prerequisite: (CMSD 4520 and CMSD 4530) or permission of department.
Principles of professional clinical practice: following administrative case procedures, writing clinical reports, developing treatment plans. Assigned observations in the University of Georgia Speech and Hearing Clinic.

CMSD 5790/7790. Rehabilitative Audiology. 3 hours.
Prerequisite: CMSD 4710 and permission of department.
Theories and procedures used in the rehabilitation of children and adults with hearing loss.

(CRSS) Crop and Soil Sciences

College of Agricultural and Environmental Sciences, Department of Crop and Soil Sciences

CRSS 2010-2010L. Crop Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1108-1108L or BTNY 1220 and BTNY 1220L.
Crop species and world centers of production; origin of crops, their uses and climatological requirements for growth, classification, morphology, reproduction, growth, and improvement.

CRSS 2830. Introduction to Turfgrass Management. 1 hour.
Turfgrasses and their management. Emphasis will be placed on how turfgrasses are used in society. Guest speakers from the turfgrass industry (golf course, sports fields, lawn care, etc.) who will discuss management systems and career opportunities.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CRSS 3050-3050L. Principles of Soil Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in CRSS(FORS) 3060-3060L.
Prerequisite: CHEM 1211 and CHEM 1211L.
Soil formation; physical, chemical, and biological properties of soils; commercial fertilizers, lime, and organic matter; and soil management practices.

CRSS(FORS) 3060-3060L. Soils and Hydrology. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in CRSS 3050-3050L.
Prerequisite: CHEM 1211 and CHEM 1211L.
Soil formation and morphology, physical and chemical properties, soil-water interactions, hydrologic processes and water balance in the landscape, and soil and water quality. Emphasis on landscape management of soil and water resources for both productivity and environmental quality.

CRSS 3270-3270L. Principles of Turfgrass Management. 3 hours. 2 hours lecture and 2 hours lab per week.
Turfgrass management practices and systems. Species selection, establishment, irrigation, mowing, fertilization, cultivation, as well as weed, insect, and disease control. Discussions will include the benefits of turfgrasses to society and various environmental issues impacting the turfgrass industry.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CRSS 3300. Crop Physiology. 3 hours.
Prerequisite: [(CRSS 2010-2010L or (BTNY 1220 and BTNY 1220L)] and (PHYS 1010 or PHYS 1111-1111L) and MATH 1113.
Physiological basis of crop growth and yield, with emphasis on phenomena occurring at the whole plant and plant community levels of organization.

CRSS(ENTO)(PATH) 3500. Turfgrass Pest Management. 3 hours.
Prerequisite: CRSS 2830 or CRSS 3270-3270L.
Identification and control of turfgrass weeds, insects, and diseases. Emphasis will be placed on management strategies that include both chemical and non-chemical approaches to the prevention and control of common turfgrass pests.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CRSS 3540. Soil Morphology and Interpretation. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Field evaluation and description of soil morphological and landscape characteristics. Estimation of soil characteristics and use interpretation from field observable features.
Non-traditional format: All instruction will occur in a field setting during weekly 1-3 hour field trips. Students will have an opportunity to participate in Regional and National Soils Competitions.

CRSS 3910. Crop Science Internship. 1-3 hours.
Not open to students with credit in CRSS 3920 or CRSS 3930.
Prerequisite: Permission of department.
Provides practical work experience in the various areas of crop science, including agribusiness, crop protection, forages, plant breeding and genetics, and row crops.
Non-traditional format: This course provides credit for internship experience. The credit hours available are variable contingent on the intensity of the internship experience.

CRSS 3920. Environmental Soil Science Internship. 3 hours.
Prerequisite: Permission of department.
Provides work experiences with private consultants, governmental agencies, and research laboratories working in the environmental soil science area. A report and presentation are required.
Non-traditional format: This course provides students credit for internship experience.

CRSS 3930. Turfgrass Management Internship. 1-3 hours. Repeatable for maximum 6 hours credit.
Not open to students with credit in CRSS 3910 or CRSS 3920.
Prerequisite: Permission of department.
Provides practical experience for students in the Turfgrass Management area.
Non-traditional format: This course provides credit for internship experience. The credit hours available are variable contingent on the intensity of the internship experience.

CRSS 3990. Special Problems in Crop and Soil Sciences. 1-3 hours.
Research on problems in crop, soil, or turfgrass management area to be conducted in laboratory, field or library; report required, directed by crop and soil science staff.
Non-traditional format: This course will provide student credit for conducting a research problem under the direction of a faculty member in Crop and Soil Sciences. Credit is variable dependent upon the scope of the research project.

CRSS 4040/6040. Plant Breeding. 3 hours.
Prerequisite: PGEN 3580 or permission of major.
Fundamental principles and theories utilized in the science of plant breeding and cultivar development and the role breeding plays in crop improvement.

CRSS 4090. Advanced Turfgrass Science. 3 hours.
Prerequisite: CRSS 2830 or CRSS 3270-3270L or permission of major.
The effects of the environment on turfgrass growth and quality management strategies for overcoming

high and low temperature stress, as well as light and water deficits. Other topics include soil modification, golf green construction, developing fertilization programs, and discussions of various pesticide/environmental issues.

Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

CRSS(BTNY) 4210/6210. Seed Physiology. 3 hours.

Undergraduate prerequisite: [CHEM 2100 or CHEM 2211 or BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010] and [PGEN 3580 or GENE(BIOL) 3200 or BTNY(CRSS)(BIOL) 4500/6500].

Undergraduate corequisite: CRSS 3300 or HORT 4210/6210 or HORT 4440/6440-4440L/6440L or BTNY 3830-3830L.

Regulation of anabolic and catabolic events during seed development, maturation, and germination processes. Ecophysiological consequences of dormancy variables, and agricultural and industrial significance of seed physiology.

CRSS 4220/6220. Topics in Crop and Soil Sciences. 1-4 hours. Repeatable for maximum 12 hours credit.

Topics and methods in Crop and Soil Sciences with a different timely topic each semester, including new areas of inquiry in crop and soil sciences.

Non-traditional format: This course provides students with exposure to evolving areas of crop and soil sciences. Credit hours are variable based upon topic covered in a particular semester. This course is also offered through University System of Georgia Independent Study (USGIS).

(CRSS)ENTO 4250/6250-4250L/6250L. Pesticide Management and Utilization. 3 hours. 3 hours lecture and 2 hours lab per week.

Prerequisite: CHEM 1212 and CHEM 1212L.

Practical management and utilization of pesticides in urban and agricultural environments. Subject areas include classification of insecticides, herbicides, and fungicides, etc., their general chemical and toxicological properties, deployment philosophy, hazards and environmental impact, formulation and application, safety and disposal, and management of pesticide resistance.

CRSS 4260/6260. Forage Management and Utilization. 3 hours.

Prerequisite: CRSS 2010-2010L or permission of department.

Characteristics of forage species; establishment, physiology, and morphology effects on management; forage quality and utilization by livestock; grazing management; hay and silage; forages for wildlife and conservation.

CRSS 4270. Crop and Soil Science Seminar. 1 hour. Repeatable for maximum 2 hours credit.

Prerequisite: Junior standing or senior standing.

Seminar in topics related to crops and soils. Participation required for credit.

CRSS 4300. Crop Production and Management. 3 hours.

Prerequisite or corequisite: CRSS 2010-2010L and CRSS 3050-3050L.

Conventional and alternative crop management systems, principles, and practices of crop science are used in discussion of management problems related to agronomic crops grown in Georgia.

CRSS 4340/6340. Weed Science. 3 hours.

Prerequisite: [CHEM 1211 and CHEM 1211L and (CRSS 2010-2010L or HORT 2000)] or permission of department.

Fundamentals of weed biology; cultural and chemical weed control; properties and uses of herbicides and herbicide application equipment; and current systems for weed management in cropping programs.

CRSS 4340L/6340L. Weed Science Laboratory. 1 hour. 2 hours lab per week.

Corequisite: CRSS 4340/6340.

Weed identification; symptomology of herbicide action; calibration of herbicide application equipment.

CRSS 4370/6370. Heavy Metals in the Environment. 2 hours.

Prerequisite: [CHEM 1212 and CHEM 1212L and (CRSS 3050-3050L or CRSS(FORS)3060-3060L)] or permission of major.

The natural level and sources of, and human activity affecting, the heavy metal composition of soils and plants, and their potential hazards to plant life and introduction into the food chain.

(CRSS)GEOG 4375/6375. GIS Applications in Agriculture. 4 hours.

Prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or ENGR 1120 or GEOG 4330/6330-4330L/6330L or GEOG 4370/6370-4370L/6370L.

An exploration of the uses of Geographic Information Science (GIS) technology in agricultural applications. Basics of Global Positioning Systems (GPS) for location reference, GIS for field investigation, and remote sensing for crop and soil evaluation will be explored. Construction of GIS databases for precision farming and watershed management applications will be required.

CRSS 4400/6400. Crop Ecology. 3 hours.

Prerequisite: CRSS 2010-2010L or BTNY 1210 and BTNY 1210L or permission of major.

World population growth and food production problems; origin, distribution, and adaptation of tropical, subtropical, and temperate crop plants as influenced by environment with emphasis on climatic factors.

(CRSS)BTNY(BIOL) 4500/6500. Introduction to Gene Technology. 3 hours.
Prerequisite: GENE(BIOL) 3200.
Methods and applications of gene technology (recombinant DNA) and related concepts in molecular biology. These will include structure and synthesis of macromolecules; cDNA and genomic cloning, polymerase chain reaction; molecular markers and mapping; gene isolation strategies; and various host-vector systems.

CRSS 4510. Contaminants in Soils. 3 hours.
Prerequisite: [CRSS 4600/6600-4600L/6600L and CRSS(MIBO) 4610/6610-4610L/6610L and CRSS 4670/6670] or permission of major.
Fate and transport of contaminants; monitoring and remediation of pollution; sources, extent, and characteristics of pollution; risk assessment and management.

CRSS 4520/6520. Field Soil and Site Assessment. 3 hours.
Prerequisite: (CRSS(GEOL) 4540/6540-4540L/6540L and CRSS 4600/6600-4600L/6600L) or permission of department.
How to assess a site to determine if the soil places any limitations on land use. Topics covered include soil sampling, soil landscapes, wetland and hydric soils, septic systems, and land application of waste.

CRSS(GEOL) 4540/6540-4540L/6540L. Pedology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or permission of department.
Soils as a natural component of the ecosystem, including morphology, landscape distribution, formation, identification of diagnostic horizons and features, and classification.
Non-traditional format: A one-day trip to North Georgia and a two-day trip to the Coastal Plain will be required at student's expense.

CRSS 4590/6590-4590L/6590L. Soil Fertility. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CRSS 3050-3050L or CRSS (FORS) 3060-3060L or permission of major.
Soil conditions affecting availability of plant nutrients; methods of determining soil fertility and insufficiency of plant nutrients in soils, and interpretation of chemical and biological measurements as related to fertility maintenance and good soil management.

CRSS 4600/6600-4600L/6600L. Soil Physics. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: [(CRSS 3050-3050L or CRSS(FORS) 3060-3060L) and MATH 2200 and (PHYS 1111-1111L or PHYS 1211-1211L)].
Physical properties and process of soils. Water, heat, and solute movement in soils.

CRSS(MIBO) 4610/6610-4610L/6610L. Soil Microbiology. 3 hours. 1 hour lecture and 4 hours lab per week.
Microorganisms in soil and their effect on nutrient recycling, especially as it relates to environmental quality and crop production.

CRSS 4660/6660-4660L/6660L. Chemical Analysis of Environmental Samples. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: CHEM 2300 and CHEM 2300L.
Analysis of soils, sediment, rocks, water for important organic and inorganic contaminants. Chromatography, atomic adsorption, and plasma emission spectroscopy, field sampling and measurements. Quality assurance/quality control, data reporting, computer use in analysis.

CRSS 4670/6670. Environmental Soil Chemistry. 3 hours.
Prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or permission of department.
Environmental soil chemistry applies and extends the concepts of chemistry and physics to the investigation of problems related to the physical, chemical, and biological characteristics of soil and their importance in relation to the management of contaminants, pesticides, and production inputs.

CRSS 4670L/6670L. Environmental Soil Chemistry Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: (CRSS 3050-3050L or CRSS(FORS) 3060-3060L) and CHEM 2300 and CHEM 2300L.
Corequisite: CRSS 4670/6670.
Laboratory evaluation of soil chemical properties.

(CRSS)ENTO(PATH) 4740/6740-4740L/6740L. Integrated Pest Management. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ENTO 3740-3740L or PATH 3530-3530L or CRSS 4340/6340.
The utilization and integration of pest control tactics (cultural methods, biological control, pesticides, host resistance) for management of insects, pathogens, and weeds. The major methodologies for controlling pests are discussed individually and within the context of profitable production of selected commodities followed by discussion of multiple pest management using integrated control techniques.

CRSS(ANTH)(ECOL)(GEOG)(HORT) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Prerequisite: Permission of department.
Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

CRSS(ANTH)(ECOL)(GEOG)(HORT) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3 hours. Repeatable for maximum 9 hours credit. 48 hours lab per week. Not open to students with credit in CRSS (ANTH)(HORT) 4940/6940.
Prerequisite: CRSS (ANTH)(ECOL)(GEOG) (HORT) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.
Non-traditional format: Students will tour a tropical country and receive on-site instruction at a series of different farms and ecological preserves over a period of 18 days.

(CSCI) Computer Science

College of Arts and Sciences, Department of Computer Science

CSCI 1100-1100L. Introduction to Personal Computing. 3 hours. 2 hours lecture and 2 hours lab per week.
Computer technology as currently used in universities, businesses, and homes. This course covers fundamental hardware, software, and networking concepts, plus the social, economic, and legal impact of information systems. Hands-on laboratory exercises cover advanced document preparation, mathematical modeling, and multimedia. Networks and the internet are emphasized throughout.

CSCI 1210. Introduction to Computational Science. 3 hours.
The use of computer models of scientific systems with examples from physical, social, medical, biological, economic, and ecological systems.

CSCI 1301-1301L. Introduction to Computing and Programming. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: MATH 1113.
Algorithms, programs, and computing systems. Fundamental techniques of program development and supportive software tools. Programming projects and applications in a structured computer language. Hands-on experience using microcomputers.

CSCI 1302. Software Development. 4 hours.
Prerequisite: CSCI 1301-1301L.
Software development techniques in an object-oriented computer language. An intermediate programming course emphasizing systems methods, top-down design, testing, modularity, and structured techniques. Applications from areas of numeric and non-numeric processing and data structures.

CSCI 1710-1710L. Introduction to Computer Science and Computer Systems. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CSCI 1301-1301L.
The basics of computer hardware and systems from the viewpoint of a potential computer science major. The associated laboratory uses the personal computer as a case study for computer architecture and operating systems. Students study and become familiar with the machine and its operating system by writing programs in a low-level (assembler) language.

CSCI 1730. Systems Programming. 2 hours.
Prerequisite: CSCI 1302.
Programs and programming techniques used in systems programming. Assembler, linker, loader, pipes, sockets, and system analysis methods used in systems environment.

CSCI 1900. Computer Science Special Topic. 1-4 hours. Repeatable for maximum 4 hours credit.
Prerequisite: CSCI 1301-1301L.
A topic in elementary computer science not covered by any other lower-division computer science course.

(CSCI)WMST 2040-2040L. Gender and Computing: Information Systems Design. 3 hours. 2 hours lecture and 2 hours lab per week.
Computers and the internet as tools of knowledge to empower the user. Issues raised will be from gender and technology literature. Laboratory sessions will provide hands-on experience with information systems design and computer programming culminating in the creation of a community-based information system.

CSCI(MATH) 2610. Discrete Mathematics for Computer Science. 4 hours
Prerequisite: CSCI 1301-1301L.
The fundamental mathematical tools used in computer science: sets, relations, and functions; propositional logic, predicate logic, and inductive proofs; summations, recurrences, and elementary asymptotics; counting and discrete probability; undirected and directed graphs; introductory linear algebra, with applications in computer science.

CSCI 2670. Introduction to Theory of Computing. 4 hours.
Prerequisite: CSCI(MATH) 2610.
The theory of computing, including finite automata, regular expressions and languages, context-free grammars and languages, push-down automata, pumping lemmas, the Chomsky hierarchy of language classes, Turing machines and computability, undecidability of the halting problem, reducibilities among decision problems and languages, time and space complexity, and NP-completeness and tractability.

CSCI 2720. Data Structures. 4 hours.
Prerequisite: CSCI 1730 and CSCI(MATH) 2610.
The design, analysis, implementation, and evaluation of the fundamental structures for representing and manipulating data: lists, arrays, trees, tables, heaps, graphs, and their memory management.

CSCI 4050/6050. Software Engineering. 4 hours.
Prerequisite: CSCI 2720.
Full cycle of a software system development effort, including requirements definition, system analysis, design, implementation, and testing. Special emphasis is placed on system analysis and design. The design phase includes development of a user interface. A large term project incorporates the full software life cycle.

CSCI 4140/6140. Numerical Methods and Computing. 4 hours.
Prerequisite: CSCI 1302 and MATH 2210 and MATH 2210L.
Prerequisite or corequisite: MATH 3000.
Numerical methods and computing. Topics include: computer arithmetic; numerical solutions of nonlinear equations; polynomial interpolation; numerical differentiation and integration; numerical solutions of systems of linear equations, initial and boundary value problems, systems of ordinary differential equations, spline functions, and the method of least squares.

CSCI 4210/6210. Simulation and Modeling. 4 hours.
Prerequisite: CSCI 2720.
The modeling and simulation of existing or planned systems for the purpose of studying their correctness, reliability, or performance. Topics to be addressed include discrete-event simulation, continuous simulation, analysis and modeling methodologies, animation, virtual reality, and Web-based simulation.

CSCI 4350/6350. Global Information Systems. 4 hours.
Prerequisite: CSCI 4370/6370 or CSCI 4570/6570.
Provides intermediate to advanced understanding of the use of Internet, World Wide Web, and network computing (including Java) technologies for management (search, access, integration, presentation) of multimedia information. Topics discussed include key techniques, tools and technologies for creating such systems, developing novel applications, and their impact on business.

CSCI 4370/6370. Database Management. 4 hours.
Prerequisite: CSCI 2720.
The theory and practice of database management. Topics to be covered include efficient file access techniques, the relational data model as well as other data models, query languages, database design using entity-relationship diagrams and normalization theory, query optimization, and transaction processing.

CSCI 4470/6470. Algorithms. 4 hours.
Prerequisite: CSCI 2720 and CSCI 2670.
Algorithms, covering basic analysis techniques, basic design techniques (divide-and-conquer, dynamic programming, greedy, and branch-and-bound), basic graph algorithms, and NP-completeness.

CSCI 4490/6490. Algorithms for Computational Biology. 4 hours.
Prerequisite: CSCI 4470/6470 or permission of department.
Application of discrete algorithms to computational problems in molecular biology. Topics are drawn from such areas as classical sequence comparison, multiple sequence alignment, DNA sequence assembly, DNA physical mapping, genome rearrangement, evolutionary tree construction, and protein folding. Background in molecular biology is not required.

CSCI 4500/6500. Programming Languages. 4 hours.
Prerequisite: CSCI 1302.
Prerequisite or corequisite: CSCI 2720.
Several modern programming languages and the paradigm — procedural programming, object-oriented programming, functional programming, and logic programming — that each strives to accommodate. Projects involve at least three languages.

CSCI 4520/6520. Functional Programming. 4 hours.
Prerequisite: CSCI 2720 and CSCI(MATH) 2610.
The functional programming paradigm: functions and types, type inference and polymorphism, higher order functions and recursion, evaluation strategies, abstract data types and modules, lists, trees, and lazy data structures, reasoning about functional programs.

CSCI(ARTI) 4540/6540. Symbolic Programming. 3 hours.
Prerequisite: CSCI 1302 or permission of department.

Prerequisite or corequisite: CSCI(PHIL) 4550/6550.
Programming in LISP and PROLOG, with emphasis on artificial intelligence techniques. Other languages used for artificial intelligence work will be presented more briefly.

CSCI(PHIL) 4550/6550. Artificial Intelligence. 3 hours.
The artificial intelligence approach to modeling cognitive processes. Topics include an introduction to heuristic methods, problem representation and search methods, classic AI techniques, and a review of the controversial issues of the AI paradigm of cognition as computation.

CSCI 4560/6560. Evolutionary Computation and Its Applications. 4 hours.
Prerequisite: CSCI 2720.
An in-depth introduction to evolutionary computation methods and an exploration of research problems in evolutionary computation and its applications which may lead to work on a project or a dissertation.

CSCI 4570/6570. Compilers. 4 hours.
Prerequisite: CSCI 4720.
Design and implementation of compilers for high-level programming languages. Topics include all phases of a typical compiler, including scanning, parsing, semantic analysis, intermediate code generation, code optimization, and code generation. Students design and develop a compiler for a small programming language. Emphasis is placed on using compiler development tools.

(CSCI)MATH 4630/6630. Mathematical Analysis of Computer Algorithms. 3 hours.
Prerequisite: MATH 3000 and (MATH 3200 or CSCI(MATH) 2610).
Discrete algorithms (number-theoretic, graph-theoretic, combinatorial, and algebraic) with an emphasis on techniques for their mathematical analysis.

(CSCI)MATH 4670/6670. Combinatorics. 3 hours.
Prerequisite: (MATH 3000 or MATH 3500) and (MATH 3200 or CSCI(MATH) 2610).
Basic counting principles: permutations, combinations, probability, occupancy problems, and binomial coefficients. More sophisticated methods include generating functions, recurrence relations, inclusion/exclusion principle, and the pigeonhole principle. Additional topics include asymptotic enumeration, Polya counting theory, combinatorial designs, coding theory, and combinatorial optimization.

(CSCI)MATH 4690/6690. Graph Theory. 3 hours.
Prerequisite: (MATH 3000 or MATH 3500) and (MATH 3200 or CSCI(MATH) 2610).
Elementary theory of graphs and digraphs. Topics include connectivity, reconstruction, trees, Euler's problem, hamiltonicity, network flows, planarity, node and edge colorings, tournaments, matchings, and extremal graphs. A number of algorithms and applications are included.

CSCI 4720. Computer Architecture and Organization. 4 hours.
Prerequisite: CSCI 2670.
Corequisite: CSCI 2720.
Structure and function of modern computing systems. Topics studied include combinational and sequential logic, number systems and computer arithmetic, hardware design and organization of CPU, I/O systems and memory systems, instruction set and assembly language design, and current trends and developments in computer architecture and organization.

CSCI 4730/6730. Operating Systems. 4 hours.
Prerequisite: CSCI 4720.
Coverage of the key concepts in modern operating systems. Specific topics include process management, synchronization mechanisms, scheduling strategies, deadlock detection/avoidance, memory management, file systems, protection and security, and distributed systems. Concepts will be reinforced through programming projects using a realistic operating system.

CSCI 4760/6760. Computer Networks: Technology and Applications. 4 hours.
Prerequisite: CSCI 2720 and CSCI 2670.
In-depth coverage of computer networks, including: digital data transmission and encoding, layered protocol models, Internet protocol, Internet client-server software, and network design methodology. Topics also include discussion of recent network technologies, legal, corporate and public-interest aspects and case studies involving public and private enterprises.

CSCI 4770/6770. Ubiquitous Computing. 4 hours.
Prerequisite: CSCI 2720.
Prerequisite or corequisite: CSCI 4730/6730 or CSCI 4760/6760.
Introduces the technologies required to develop mobile and ubiquitous computing applications, including communication protocols, naming and location management, replication and consistency management, security and privacy, content adaptation, and battery power management.

CSCI 4800/6800. Human-Computer Interaction. 4 hours.
Prerequisite: CSCI 2720.
Issues in the design, development, and evaluation of user interfaces for computer systems. Concepts in human factors, usability, and interface design, and

the effects of human capabilities and limitations on interaction with computer systems.

CSCI 4810/6810. Computer Graphics. 4 hours.
Prerequisite: CSCI 2720 and CSCI 2670.
Principles of two-dimensional and three-dimensional interactive raster graphics. Principles of scan conversion algorithms for two-dimensional and three-dimensional graphics primitives; data structures and modeling techniques for raster graphics; interaction, visual realism, animation and user interface design; ray tracing, illumination, shading, data storage/retrieval, software engineering and parallel computing for graphics.

CSCI 4900/6900. Special Topics in Computer Science. 1-4 hours. Repeatable for maximum 14 hours credit.
Prerequisite: Permission of department.
Various advanced topics in Computer Science.

(CSCI)ENGR 4922. Computer Systems Engineering Design Project. 3 hours.
Prerequisite or corequisite: CSCI 4720 and ENGR 4250/6250.
Engineering design experience, including completion of a design project under the supervision of a project director.

CSCI 4950/6950. Directed Study in Computer Science. 1-4 hours. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Content will vary in response to the interests, needs, and capability of the students and faculty involved. Individual, guided study in computer science.
Non-traditional format: Directed study.

CSCI 5007/7007. Internship in Computer Science Business/Industry. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Internship in a professional setting allowing the student to integrate his/her educational experience with real-world situations in software development, database technology, hardware design, networks, etc.
Non-traditional format: Supervised occupational experience in business and industry.

CSCI 5080/7080-5080L/7080L. Personal Computer System Administration. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CSCI 1100-1100L.
Management of Windows and Macintosh computer systems. Topics covered include configuration, backups, hardware and software troubleshooting, and setting up for Internet access. Hands-on laboratory emphasized.

(DANC) Dance Education

College of Education, Department of Dance Education

DANC 1250. Performance Company I. 1 hour. Repeatable for maximum 2 hours credit. 4 hours lab per week.
Participation as a dancer in a faculty-choreographed dance piece.

DANC 1601. Tap Dance Foundations. 1 hour. 2 hours lab per week.
Foundation training necessary for the development of skill proficiency in tap dance.

DANC 1605. Modern Dance Foundations. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Foundation training necessary for the development of skill proficiency in modern dance.

DANC 1606. Ballet Foundations. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Foundation training necessary for the development of skill proficiency in ballet.

DANC 1610. Tap Dance I. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Course designed to aid the student in the acquisition and development of technical and performance skills in tap dance.

DANC 1650. Modern Dance I. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
The acquisition and development of technical skills in modern dance. Techniques basic to this dance form plus motional properties as they relate to dance will be emphasized.

DANC 1660. Ballet I. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Designed to build the strength, flexibility, endurance, and control necessary for performance of low intermediate-level ballet barre exercises, adagio sequences, and allegro enchainments. An understanding of proper body mechanics and the French vocabulary for ballet will also be emphasized.

DANC 2000. Production Assignment I. 1 hour. 6 hours lab per week.
Experience in publicity, graphic design, stage lighting, stage management, and costuming through faculty-supervised and monitored participation as a member of the production crew for three dance concerts sponsored by the department of Dance.

DANC 2010. Dance Appreciation. 3 hours.
All aspects of the dance experience, exploring related roles of the dancer, choreographer and

spectator. Historical and critical readings and illustrated lectures will acquaint the student with masterpieces of dance theatre art and develop the student's responsiveness to dance.

DANC 2250. Performance Company II. 1 hour. Repeatable for maximum 2 hours credit. 4 hours lab per week.
Participation as a dancer in a faculty-choreographed dance piece.

DANC 2300. Dance Improvisation I. 2 hours. 1 hour lecture and 2 hours lab per week.
Provides the individual an opportunity to explore movement initiated through various sources including internal motivation. Emphasis will be on individual and group interaction within structured and free improvisational situations, all for the purpose of developing the student's creative approach to composing and performing.

DANC 2600. Tap Dance and Rhythmic Analysis. 3 hours.
Fundamentals of rhythm and musical form relevant to the needs of the dance educator, performer, and choreographer. Tap dance will serve as a basis of study.

DANC 2610. Tap Dance II. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Prerequisite: Permission of department.
Intermediate level course designed to aid the student in the continued acquisition and development of technical and performance skills in tap dance.

DANC 2620. World Dance Forms. 1 hour. Repeatable for maximum 3 hours credit. 2 hours lab per week.
Dance forms indigenous to specific regions of the world.

DANC 2630. Methods of Teaching Social Dance. 2 hours. 1 hour lecture and 2 hours lab per week.
Methods of teaching ballroom, folk, line, and square dance to grades kindergarten through twelve.

DANC 2640. Jazz Dance I. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Movement application for improving the technical execution and stylistic definition of jazz dance.

DANC 2650. Modern Dance II. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Prerequisite: Four hours of DANC 1650.
Intermediate-level course designed to aid the student in continued acquisition and development of technical skills in modern dance. Techniques basic to this dance form plus motional properties as they relate to dance will be emphasized.

DANC 2660. Ballet II. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Prerequisite: Four hours of DANC 1660.
Designed to build the strength, flexibility, endurance, and control necessary for performance of intermediate-level ballet barre exercises, adagio sequences, and allegro enchainments. An understanding of proper body mechanics and the French vocabulary will also be emphasized.

DANC 2670. Pointe I. 1 hour. 2 hours lab per week.
Basic vocabulary and skills of classical ballet transferred to dancing on pointe.

DANC 2680. Pas de Deux I. 1 hour. 2 hours lab per week.
Designed to develop the intermediate level dance student's ability to transfer classical ballet skills into partnered pas de deux work.

DANC 2690. Ballroom Dance I. 2 hours. 4 hours lab per week.
Designed for the student possessing a foundation in social dance. Universally popular ballroom dances from the American style syllabus will be presented at the beginning level.

DANC 2850. Pre-Professional Performance Company I. 1-2 hours. Repeatable for maximum 2 hours credit. 8-12 hours lab per week.
The practice and experience of dancer performance in a dance company. Training and participation in all areas critical to the operation of a dance company, including mainstage performance, touring, and management of all production concerns.

DANC 3000. Production Assignment II. 1 hour. 6 hours lab per week.
Continued experience in publicity, graphic design, stage lighting, stage management, and costuming through faculty-supervised and monitored participation as a member of the production crew for three dance concerts sponsored by the Department of Dance.

DANC 3200. Teaching Practicum in Dance I. 1 hour. 2 hours lab per week.
Directed observation and teaching of dance classes preschool through college.

DANC 3210. Teaching Practicum in Dance II. 1 hour. 2 hours lab per week.
Prerequisite: DANC 3200.
Directed observation and teaching of dance classes preschool through college.

DANC 3220. Teaching Practicum in Dance III. 1 hour. 2 hours lab per week.
Prerequisite: DANC 3210.
Directed observation and teaching of dance classes preschool through college.

DANC 3250. Performance Company III. 1 hour. Repeatable for maximum 2 hours credit. 4 hours lab per week.
Prerequisite: Two hours of DANC 2250.
Participation as a dancer in a faculty-choreographed dance piece.

DANC 3400. Introduction to Dance Composition. 2 hours. 1 hour lecture and 2 hours lab per week.
The principles of dance composition, with emphasis upon the development of solo, duet, and trio studies.

DANC 3640. Jazz Dance II. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Prerequisite: DANC 2640.
Movement applications for improving technical proficiency, performance dynamics, and stylistic clarity. Dance combinations will explore pop, funk, adagio, blues, and Broadway jazz styles.

DANC 3650. Modern Dance III. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Prerequisite: DANC 2650.
High intermediate-level course designed to aid the student in continued acquisition and development of technical skills in modern dance. Technique and theory basic to this dance form plus motional properties as they relate to dance will be emphasized.

DANC 3660. Ballet III. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Prerequisite: DANC 2660.
Designed to build the strength, flexibility, endurance, and control necessary for performance of high intermediate-level ballet barre exercises, adagio sequences, and allegro enchainments. Pointe work may be included.

DANC 3670. Pointe II. 1 hour. 2 hours lab per week.
Prerequisite: DANC 2670.
Develops the beginning to intermediate pointe student's ability to transfer to pointe work the vocabulary and skill learned in Ballet II.

DANC 3680. Pas de Deux II. 1 hour. 2 hours lab per week.
Prerequisite: DANC 2680.
Designed to develop the advanced-intermediate level dance student's ability to transfer classical ballet skills into partnered pas de deux work.

DANC 3690. Ballroom Dance II. 2 hours. 4 hours lab per week.
Prerequisite: DANC 2690.
Designed for the student having mastered steps at the beginning level of the American style syllabus. Intermediate level steps and figures will be presented, with proper technique and alignment stressed.

DANC 3700. Dance Pedagogy I. 2 hours. 2 hours lecture and 2 hours lab per week.
Designed to introduce the teacher to the skills and activities of creative movement and rhythm for children from nursery school through sixth grade.

DANC 3720. Topics in Multicultural Education I. 2 hours. Repeatable for maximum 4 hours credit. 6 hours lab per week.
Provides dance performance and production experiences to students through the development and presentation of lecture demonstrations. Through residencies in schools and community centers, the student will become familiar with dance as a tool for multicultural interdisciplinary education.

DANC 3850. Pre-Professional Performance Company II. 1-2 hours. Repeatable for maximum 2 hours credit. 8-12 hours lab per week.
Prerequisite: Two hours of DANC 2850.
The continued practice and experience of dance performance in a dance company. Training and participation in all areas critical to the operation of a dance company, including mainstage performance, touring, and management of all production concerns.

DANC 4000. Independent Study in Dance. 1-6 hours. Repeatable for maximum 6 hours credit.
Independent study in a selected dance topic.
Non-traditional format: Independent study.

DANC 4010. Dance Science and Movement Analysis. 3 hours. 1 hour lecture and 2 hours lab per week.
Exploration of scientific approaches to dance training and Laban Movement Analysis SM. Emphasis will be placed upon proper training techniques, injury prevention and rehabilitation, and development of the student's ability to describe, record, and analyze movement.

DANC 4020. Theories of Movement. 2 hours. 1 hour lecture and 2 hours lab per week.
Theoretical and applied principles of human movement embodied in alternative training systems which serve the dancer.

DANC 4030. Classical Ballet Forms. 2 hours.
Technique systems, story-telling devices, and corps work specific to classical ballet.

DANC 4250. Performance Company IV. 1 hour. Repeatable for maximum 2 hours credit. 4 hours lab per week.
Prerequisite: Two hours of DANC 3250.
Participation as a dancer in a faculty-choreographed piece.

DANC 4300. Dance Improvisation II. 2 hours. 2 hours lab per week.
Continued exploration of movement initiated through various sources including internal motivation. Students will gain experience in the leading of improvisational structures.

DANC 4400. Dance Composition and Technology Interface. 3 hours. 2 hours lecture and hours lab per week.
Prerequisite: DANC 3400.
Dance composition specifically applied to the development of group choreography. Students will explore the role technology plays in dance art of the twenty-first century.

DANC 4500. World Dance History. 3 hours.
Dance as a reflection of culture and as an art form from the times of earliest lineage-based societies to the present. Socio-cultural influence and the contributions of individual artists will be investigated.

DANC 4510. Dance History II. 3 hours.
Prevalent twentieth-century dance forms. Socio-cultural influences and the contributions of individual artists will be investigated.

DANC 4640. Jazz Dance III. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Prerequisite: DANC 3640.
Extension of material in Jazz Dance II with technical performance emphasis.

DANC 4650. Modern Dance IV. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Prerequisite: Four hours of DANC 3650.
Advanced-level course designed to aid the student in the continued acquisition and development of technical skills in modern dance. Technique and theory basic to this dance form plus motional properties as they relate to dance will be emphasized.

DANC 4660. Ballet IV. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Prerequisite: Four hours of DANC 3660.
Designed to build the strength, flexibility, endurance, and control necessary for performance of advanced-level ballet barre exercises, adagio sequences, allegro enchainments, and pointe work. Style, perfection, and performance quality will be emphasized.

DANC 4670. Pointe III. 1 hour. 2 hours lab per week.
Prerequisite: DANC 3670.
Develops the intermediate pointe student's ability to transfer to pointe work the vocabulary and skill learned in Ballet III.

DANC 4680. Pas de Deux III. 1 hour. 2 hours lab per week.
Prerequisite: DANC 3680.
Designed to develop the advanced level dance student's ability to transfer classical ballet skills into partnered pas de deux work.

DANC 4690. Ballroom Dance III. 2 hours. 4 hours lab per week.
Prerequisite: DANC 3690.
Designed for the student having mastered steps and figures at the intermediate level of the American style syllabus. Dances from the international or English style syllabus will be presented with proper technique and alignment stressed.

DANC 4700. Dance Pedagogy II. 3 hours. 2 hours lecture and 2 hours lab per week.
Content, methods, and materials for dance instruction of the secondary level student. Historical development of dance in education, specific teaching procedures, and assessment are emphasized.

DANC 4720. Topics in Multicultural Education II. 2 hours. Repeatable for maximum 4 hours credit. 6 hours lab per week.
Prerequisite: DANC 3720.
Provides enhanced dance performance and production experiences to students through the development and presentation of lecture demonstrations. Through residencies in schools and community centers, the student will become familiar with dance as a tool for multicultural and interdisciplinary education.

DANC 4850. Pre-Professional Performance Company III. 1-2 hours. Repeatable for maximum 2 hours credit. 8-12 hours lab per week.
Prerequisite: Two hours of DANC 3850.
The continued practice and experiences of dance performance in a dance company. Training and participation in all areas critical to the operation of a dance company, including mainstage performance, touring, and management of all production concerns.

DANC 4900. Choreographic Project. 2 hours. 8 hours lab per week.
Fully produced studio presentation of the student's original choreographic piece. The student will write a pre-production proposal and a post-production summary.

DANC 5460. Student Teaching in Dance Education. 12 hours.
Prerequisite: DANC 3700 and DANC 4700 and permission of department.
Thirteen-week, full-time teaching assignment in a cooperating school.
Non-traditional format: Student teaching.

DANC 5650. Modern Dance V. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Prerequisite: Four hours of DANC 4650.
Highly advanced-level course designed to aid the student in the continued acquisition and development of technical skills in modern dance. Technique and theory basic to this dance form plus motional properties as they relate to dance will be emphasized.

DANC 5660. Ballet V. 2 hours. Repeatable for maximum 4 hours credit. 4 hours lab per week.
Prerequisite: Four hours of DANC 4660.
Designed to build the strength, flexibility, endurance, and control necessary for performance of highly advanced-level ballet barre exercises, adagio sequences, allegro enchainments, and pointe work. Style, perfection, and performance quality will be emphasized.

DANC 5670. Pointe IV. 1 hour. 2 hours lab per week.
Prerequisite: DANC 4670.
Develops the advanced pointe student's ability to transfer to pointe work the vocabulary and skills learned in Ballet IV.

DANC 5680. Pas de Deux IV. 1 hour. 2 hours lab per week.
Prerequisite: DANC 4680.
Designed to develop the highly advanced level dance student's ability to transfer classical ballet skills into partnered pas de deux work.

DANC 5850. Pre-Professional Performance Company IV. 1-2 hours. Repeatable for maximum 2 hours credit. 8-12 hours lab per week.
Prerequisite: Two hours of DANC 4850.
The continued practice and experience of dance performance in a dance company. Training and participation in all areas critical to the operation of a dance company, including mainstage performance, touring, and management of all production concerns.

(DRAM) Drama

College of Arts and Sciences, Department of Drama

DRAM 2000. Appreciation of Dramatic Art. 3 hours. 2 hours lecture and 2 hours lab per week.
Aesthetics and craft of the theatrical experience on stage, screen, and television. Discussions and analyses of all aspects of the theatrical arts; critical viewing of performances both in and out of class with written analyses. May not be used for credit towards the drama major.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

DRAM 2010. Introduction to Acting. 3 hours. 3 hours lab per week.
Basic acting skills for the non-drama major.

DRAM 2040. Applied Drama Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Individual production crew assignments.

DRAM 2050. Applied Drama Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Individual production crew assignments.

DRAM 2060. Applied Drama Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Individual production crew assignments.

DRAM 2100H. Appreciation of Theatre (Honors). 3 hours.
Not open to students with credit in DRAM 2000.
Prerequisite: Permission of Honors.
All aspects of the theatrical experience on stage and screen, emphasizing the role of the audience as well as that of the artist. May not be used for credit towards the drama major.

DRAM 2110. Voice of Diversity in Contemporary American Drama. 3 hours.
Dramatic works which foreground issues of race, gender, culture, and/or ethnicity. Concepts of perception and identity, group relationships, and social/political protest.

DRAM 2120. Introduction to Cinema. 3 hours. 2 hours lecture and 2 hours lab per week.
Film aesthetics and film as an art form, including critical viewing of selected films in laboratory, and papers on topics in film and audience values.

DRAM 2121H. Introduction to Cinema (Honors). 3 hours. 2 hours lecture and 2 hours lab per week.
Not open to students with credit in DRAM 2120.
Prerequisite: Permission of Honors.
Film aesthetics and film as an art form, including critical viewing of selected films in laboratory, and papers on topics in film and audience values.

DRAM 2130. American Ethnic Cinema. 3 hours. 2 hours lecture and 2 hours lab per week.
Cultural history of the most important ethnic film makers in the American cinema from the 1920's to the present, with emphasis on stories and styles of the films, as well as on the underlying economic and social contexts.

DRAM 2131H. American Ethnic Cinema (Honors). 3 hours. 2 hours lecture and 2 hours lab per week.
Not open to students with credit in DRAM 2130.
Prerequisite: Permission of Honors.
Cultural history of the most important ethnic film makers in the American cinema from the 1920's to the present, with emphasis on stories and styles of the films, as well as on the underlying economic and social contexts.

DRAM 3020. Basic Dramatic Writing. 3 hours.
The principles and process of dramatic writing.

DRAM 3200. Foundations of Theatre History. 3 hours.
History of theatre and dramatic arts from their beginning to 1800.

DRAM 3210. Foundations of Modern Theatre History. 3 hours.
History of theatre and dramatic arts from 1800 to the present, examining the interplay of theatre with photography, film, radio, television, and computer-based story telling.

DRAM 3290. Script Analysis. 3 hours.
A method for analyzing scripts intended for performance. Course may be taken through UGA Studies Abroad program in Parma.

DRAM 3291H. Script Analysis (Honors). 3 hours.
Not open to students with credit in DRAM 3290.
Prerequisite: Permission of Honors.
A method of analyzing scripts intended for performance.

DRAM 3300. Foundations of Performance Design. 3 hours.
Basic principles and techniques of design in contemporary performing arts, including the development and practice of scenery, costume, lighting, and other design aspects of stage and media production, with a look at major contemporary designers.

DRAM 3330. Costuming for the Performance Arts. 3 hours.
Prerequisite: DRAM 3300.
Planning and design of performance costumes, including exploration of drawing, painting, production, and play analysis.

DRAM 3340-3340L. Scenery Fabrication and Painting. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: DRAM 3300.
Planning, construction, painting, and installation of scenery, props, and rigging.

DRAM 3500. Acting I: Foundations of Acting. 3 hours. 6 hours lab per week.
Participation in a series of group and individual activities designed to develop basic acting skills. The course also includes exercises for the actor's voice and body. Open only to drama majors.

DRAM 3520. Makeup for the Performance Arts. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 3300.
Fundamental principles and practices in makeup for stage and media. Drawing and face painting skills as well as practice in use of cosmetics, wigs, hair pieces, and work with departmental productions.

DRAM 4000/6000. Dramatic Writing I. 3 hours.
Prerequisite: DRAM 3020.
Planning, writing, and polishing the short script for performance.

DRAM 4250/6250. History of Cinema I. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: DRAM 2120.
The development of the international film and of film theories from 1895 to 1945, with emphasis on cinema as a dramatic medium.

DRAM 4260/6260. History of Cinema II. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: DRAM 2120.
The development of international film and film theories from 1945 to the present, with emphasis on cinema as a dramatic medium.

(DRAM)TXMI 4270/6270. History of Costume: Antiquity to Nineteenth Century. 3 hours.
Prerequisite: Permission of department.
Interrelationships of costume and social, cultural, political, and economic environments from antiquity to the nineteenth century.

DRAM 4280/6280. Women in Performance. 3 hours.
Women's contributions to the performing arts, focusing on contemporary American artists in such fields as theatre, film, dance, performance art, and other contemporary performance genres.

DRAM 4400/6400. Asian Theatre and Drama. 3 hours.
Genres of performance in India, China, Japan, and Southeast Asia. Focus on social and cultural significance of performances, including examples of Noh, Kabuki, Beijing Opera, Kathakali, Kutiyattam, Wayang Kulit, and Topeng.

DRAM 4460/6460. History of Dramatic Art in Italy. 3 hours.
Dramatic art in Italy and England from the Greek colonists to the present. Special emphasis on field

trips to archaeological sites and special museums. Visits to contemporary performances.
Non-traditional format: Must be registered in the Studies Abroad program and participate on-site.

DRAM 4480/6480. History of African American Drama and Theatre. 3 hours.
The emergence of a distinct and conscious African American theatre in the United States.

(DRAM)AFAM 4490/6490. African American Women in Cinema: Image and Aesthetics. 3 hours.
Prerequisite: Permission of department.
Selected films by and about African and African American women. A historical/critical overview of the presentation of these women in cinema with emphasis on contemporary African and African American women film makers.

DRAM 4800/6800. Topics in History. 3 hours. Repeatable for maximum 6 hours credit.
Topical issues in theatre or cinema, combining history and critical analysis of specific significant topics (e.g., national theatre or cinema, animation, authorship, genre).

DRAM 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.

DRAM 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.

DRAM 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.

DRAM 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field or in a closely related field.

DRAM 5010. Acting II: Scene Study. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 3500 and permission of department.
Concentration on voice, movement, and character study for actors.

DRAM 5051. Applied Drama Laboratory. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Prerequisite: DRAM 2040 or DRAM 2050 or permission of department.
Open only to drama majors. Individually assigned production and/or performance crew.

DRAM 5052. Applied Drama Laboratory. 1 hour. Repeatable for maximum 2 hours credit. 2 hours lab per week.
Prerequisite: DRAM 5051.
Open only to drama majors. Individually assigned production and/or performance crew.

DRAM 5053. Senior Seminar. 3 hours.
Prerequisite: Senior standing or permission of department.
The current status of dramatic arts with specific planning and preparation to enter into the profession. The course includes Senior Exit Examination. Open only to drama majors.

DRAM 5110/7110. Stage Management. 3 hours.
Prerequisite: Permission of department.
A survey of the organization and practical application and execution of performance events.

DRAM 5310/7310. Technical Problems. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: DRAM 3340-3340L.
Special topics in advanced theory and techniques of performance technology, including scenery construction and rigging, costume construction, lighting technology, and sound.

DRAM 5320/7320. Computer-Aided Design for the Performance Arts. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Prerequisite: DRAM 3300 and permission of department.
Techniques of computer-aided design and drafting in the performing arts.

DRAM 5330/7330. Costume Design for the Performance Arts. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 3300.
Costume design for the performing arts, emphasizing conceptualization and application for basic research and technology to meet dramatic needs.

DRAM 5331/7331. Shakespeare. 3 hours. 6 hours lab per week.
Not open to students with credit in DRAM 4330/6330.
Prerequisite: DRAM 3500 or permission of department.
Performance of Shakespeare's plays.

DRAM 5340/7340. History of Costume and Decor. 3 hours.
Prerequisite: DRAM 3300.
The styles of costuming, architecture, furnishing, and ornamentation in significant theatrical periods.

DRAM 5351/7351. Scenic Design for the Performance Arts. 3 hours. 9 hours lab per week.
Prerequisite: DRAM 3300.
Prerequisite or corequisite: DRAM 3300.
Scenic design for the performing arts, emphasizing conceptualization and application for basic research and technology to meet dramatic needs.

DRAM 5352/7352. Lighting Design for the Performance Arts. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 3300.
Lighting design for the performing arts, emphasizing conceptualization and application for basic research and technology to meet dramatic needs.

DRAM 5380/7380. Design Technology for the Performance Arts. 3 hours.
Prerequisite: DRAM 3300.
Basic technology for performance production. Costume materials and construction, scenery rigging and movement, lighting equipment and technology, and sound equipment and practices.

DRAM 5480/7480. Topics in Design. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
A special topics course in theatre design.
Non-traditional format: Special workshops with guest artists.

DRAM 5481/7481. Topics in Cinema. 3 hours. Repeatable for maximum 9 hours credit. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: DRAM 2120.
Special topics course in cinema studies, combining history and critical analysis of specific topics (animation, national cinema, authorship, genre).
Non-traditional format: Two-hour lab for possible film screenings.

DRAM 5500. Acting III: Advanced Acting. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5010 and permission of department.
Role analysis and the problems and techniques of creating subtext with special relation to text and improvisation.

DRAM 5510. Actor Training I: Physical Actor. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5010 and permission of department.
Intensive study in physical techniques for the actor.

DRAM 5530. Actor Training II: Voice for the Actor. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5010 and permission of department.
Intensive training in voice techniques for the actor.

DRAM 5560. Acting in Period Styles. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5010 and permission of department.
Problems and techniques of acting in periods and styles through intensive scene study and performance.

DRAM 5570. Acting for the Camera. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5010 and permission of department.
Applying theatre acting techniques to the demands of modern media. Practical work in class with emphasis on the vocal and physical demands of dramatic material designed for television and cinema.
DRAM 5580/7580. Performance Topics. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Selected performance topics and theories.

DRAM 5590. Special Projects in Drama. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Special projects for the advanced student, including internships.
Non-traditional format: Directed study.

DRAM 5600. Play Direction. 3 hours. 6 hours lab per week.
Prequisite: Junior or senior standing.
Basic methods and procedures of the art of dramatic directing.

DRAM 5610/7610. Play Direction Laboratory. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5600.
The director's analysis of the script, the actor-director relationship, and theatrical style. Each student directs a one-act play or short film.

DRAM 5620/7620. Dramatic Writing II. 3 hours.
Prerequisite: DRAM 4000/6000.
Developing the full length script for performance.

DRAM 5630/7630. Producing the New Script. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Critical and practical work in producing new scripts for writers, actors, directors, and designers.

DRAM 5640/7640. Directing for the Cinema. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5600 or permission of department.
Theories and techniques of the dramatic cinema.

DRAM 5680/7680. Topics in Dramatic Writing. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.

A special topics course in dramatic writing.
Non-traditional format: Special workshops with guest artists.

DRAM 5730/7730. Advanced Costume Design for the Performance Arts. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5330/7330.
Projects in costume design for the performing arts, emphasizing multi-character and highly complex designs using traditional and complex methods and technologies.

DRAM 5751/7751. Advanced Scenic Design for the Performance Arts. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5351/7351.
Advanced scenic design for the performing arts, emphasizing multi-character and highly complex designs using traditional and complex methods and technologies.

DRAM 5752/7752. Advanced Lighting Design for the Performance Arts. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5352/7352.
Projects in design (scenery, costume, lighting, sound) with an emphasis on multi-character, multi-setting and highly complex designs using current and advanced methods and technologies.

DRAM 5780/7780. Topics in Computer Technology. 3 hours. Repeatable for maximum 9 hours credit. 6 hours lab per week.
Prerequisite: Permission of department.
A special topics course in computer technology not otherwise offered in the drama and theatre curriculum.
Non-traditional format: Lecture and discussion is integrated with hands-on work at the workstations.

DRAM 5810/7810. Computer Animation for Dramatic Media I. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 3300 and permission of department.
Computer animation in television, film, and theatre from the perspective of the director/animator. The hardware and software necessary to create computer animation is accompanied by the principles of kinetics and narrative story-telling in a visual medium.

DRAM 5820/7820. Computer Animation for Dramatic Media II. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5810/7810 or permission of department.
Advanced computer animation techniques and digital compositing which integrate live action with computer generated environments.

DRAM 5830/7830. Computer Animation for Dramatic Media III. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5820/7820 or permission of department.
Preparation of a portfolio-quality computer animation project, including a narrative script story book, pre-production meetings, schedules and budgets, production and post-production.

DRAM 5860/7860. Interactive Media as Drama I. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
Practice and theory of interactive multimedia as a dramatic medium. Multimedia hardware and software, principles of interactive design, and comparison of development tools and delivery systems including CD-ROM and the World Wide Web.

DRAM 5861/7861. Interactive Media as Drama II. 3 hours. 6 hours lab per week.
Prerequisite: DRAM 5860/7860.
Advanced exploration of interactive media as a dramatic form, with an emphasis on algorithmic structures, self-generating media, adaptive behaviors, and object-oriented programming techniques.

DRAM 5870/7870. Interactive Multimedia and Live Performance. 3 hours. 6 hours lab per week.
Prerequisite: Permission of department.
The use of computers to trigger and manipulate media events, including sound, lighting, digital images and video, and techniques allowing performers and spectators to interact with such media events in real time. Topics include sensors, motion capture, MIDI, and theoretical issues concerning the interaction between live performance and media.

(EAGR) Agricultural Education

College of Education, Department of Occupational Studies

EAGR 4010/6010. Agricultural Education Leadership Seminar. 1 hour. Repeatable for maximum 5 hours credit. 1 hour lab per week.
Current problems in teaching agricultural education and training in specialized areas relevant to the needs of future teachers of agricultural education.
Non-traditional format: Involvement in off-campus Agricultural Education/FFA activities will also be required in order to succeed in the class.

EAGR 4340/6340. Developing Community Programs in Agriculture. 3 hours.
Developing the components of high school agriculture education programs, including collection and use of demographic data to design and implement community based programs.

EAGR 4350/6350. Curriculum Planning in Agricultural Education. 3 hours.
Content identification, program organization, preparation of instructional objectives, and guidelines for selection and development of instructional materials for agricultural education.

EAGR 4360/6360. Instructional Strategies in Agricultural Education. 3 hours.
Study and evaluation of teaching materials, methods, techniques, and strategies utilized in agricultural education.

EAGR 5460. Student Teaching in Agricultural Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Full-time supervised student teaching experience in an existing agricultural education program.
Non-traditional format: Supervised full-time experience in school setting.

(EBUS) Business Education

College of Education, Department of Occupational Studies

EBUS 4010/6010. Business Communication. 3 hours.
Theory and practice of thinking, reading, writing, speaking, and listening processes involved in business education.

EBUS 4020/6020. Computer Concepts and Operating Systems for Occupational Studies. 3 hours.
Computer hardware and software operating procedures, data organization and representation. Current trends in occupational uses of computer technology and instructional approaches for teaching operating systems.

EBUS 4350. Curriculum Planning in Business Education. 3 hours.
Prerequisite: Permission of department.
Content identification, program organization, preparation of instructional objectives, and guidelines for selection and development of instructional materials for business education.

EBUS 5030/7030. Word Processing Applications. 3 hours.
Prerequisite: Permission of department.
Word processing with popular software packages. Focus is on advanced features of word processing packages, including merging, sorting, mathematical functions, and desktop publishing and instructional approaches for teaching word processing in occupational studies.

EBUS 5060/7060. Desktop Publishing in Occupational Studies. 3 hours.
Computer applications for electronic publishing, including elements of page design, effective publications, presentations, instructional materials, and instructional approaches for teaching desktop publishing in occupational studies.

EBUS 5070/7070. Office Management. 3 hours.
Office management, including practices, supervision, information management, methods and procedures, job organization, evaluation, selection, and training of office personnel.

EBUS 5090/7090. Spreadsheet and Presentation Applications in Occupational Studies. 3 hours.
Prerequisite: Permission of department.
Spreadsheet and presentation software, including spreadsheet commands, graphs, data sorting, querying, and macro design and presentation software commands, design, sequencing and practice demonstration. Instructional approaches for teaching spreadsheets and presentation software in occupational studies.

EBUS 5100/7100. Systems Analysis and Design for Occupational Studies. 3 hours.
Prerequisite: Permission of department.
Technical background and knowledge for teaching information systems development and implementation in occupational studies. Instructional strategies for project management, documentation standards, hardware and software considerations, systems design, and program languages.

EBUS 5460. Student Teaching in Business Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Supervised student teaching experience in a business education program.
Non-traditional format: Supervised full-time experience in school setting.

EBUS 5760/7760. Consumer Financial Planning. 3 hours.
Consumer problems encountered during and after school years. How the economy functions, wise purchase decisions, managing money, evaluating sales and advertising practices, and guarding against unwise buying practices. Instructional approaches for teaching financial planning in occupational studies.

(ECHD) Counseling and Human Development Services

College of Education, Department of Counseling and Human Development Services

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ECHD 2050. Academic and Career Planning. 2 hours. Repeatable for maximum 6 hours credit.
Review of decision making models for selecting academic majors and exploring career options. Focus is on self-exploration, assessment of career and academic interests, and understanding of the world of work compatible with students' personality styles, skills, abilities, and values.

ECHD 3010. Paraprofessional Helping Strategies. 1-3 hours. Repeatable for maximum 6 hours credit.
Development of basic skills needed by student peer helpers and other paraprofessionals in various educational settings.

ECHD 3050. Career and Life Planning. 3 hours. Repeatable for maximum 6 hours credit.
The process of career and life planning and developing skills necessary for informed career decision making. Focus is on the processes of self-assessment, decision making, career exploration, and preparation for employment.

ECHD 4000. Special Problems in Counseling and Human Development Services. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Current philosophical, psychological, sociological, and developmental trends, unique interests, special training needs, and research efforts of students.
Non-traditional format: May be taught as an independent study for an individual or group, or as a formal class for all students.

ECHD 4020/6020. Interpersonal Relationships. 3 hours.
Prerequisite: Permission of department.
Interpersonal skills are taught and demonstrated by the instructor. Students practice the skills in role-playing situations. Skills included are physical attending, psychological attending, listening, perceiving surface and underlying feelings, basic responding skills, personalizing skills, and initiating skills. Intended for non-majors.

(ECOL) Ecology

College of Environment and Design, Institute of Ecology

ECOL 1000-1000L. Ecological Basis of Environmental Issues. 4 hours. 3 hours lecture and 3 hours lab per week.
Not open to students with credit in GEOG 1125 or ECOL 3070.
Ecological concepts that form the basis for understanding environmental issues confronting us; population growth, loss of diversity, resource limitation, pollution, and global climate change.

ECOL 1000H. Ecological Basis of Environmental Issues (Honors). 3 hours. 2 hours lecture and 3 hours lab per week.
Not open to students with credit in GEOG 1125 or ECOL 1000-1000L or ECOL 3070.
Prerequisite: Permission of Honors.
Introduction to ecological concepts of population growth, loss of diversity, resource limitation, pollution, and global climate change. Taught at various locales in the United States.

ECOL 3070. Environment and Humans. 3 hours.
Not open to students with credit in ECOL 1000-1000L or GEOG 1125.
Macro-environmental problems currently faced by humans placing them in historical perspective, and relating them to the natural laws and ecological processes which govern the outcome of human-environmental interactions.

ECOL 3260-3260L. Vertebrate Diversity and Evolution. 4 hours. 2 hours lecture and 4 hours lab per week.
Not open to students with credit in CBIO 3000-3000L.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or permission of department.
The evolution, diversity, and higher order relationships of vertebrate animals and their principal adaptations to life.

ECOL 3400. Junior Seminar. 1 hour.
Prerequisite: Junior standing and permission of major.
Ecology seminar used to introduce juniors entering the major with the way ecological science is organized, to explain the requirements of the major, and show options to create personalized programs for specific interests, employment or continued schooling. Career and graduate school opportunities will be discussed.

ECOL(BIOL) 3500-3500L. Ecology. 4 hours. 3 hours lecture and 3 hours lab per week.
Not open to students with credit in GEOG 3210.

Prerequisite: (BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or BTNY 1220 and BTNY 1220L) and [(CHEM 1211 and CHEM 1211L) or (CHEM 1311H and CHEM 1311L)].
Population structure and dynamics, organization and classification of communities, and nutrient and energy flows in ecosystems.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ECOL(BIOL) 3510. Ecology Laboratory. 3-4 hours. Repeatable for maximum 10 hours credit.
Prerequisite: ECOL(BIOL) 3500-3500L.
Techniques and methodologies to assess organismal, population, community, or ecosystem interactions.
Non-traditional format: A field course taught for blocks of time off-campus (semester breaks or summer). Additional on-campus lecture hours may be added depending upon the field schedule.

ECOL 3520. Ecological Applications. 3 hours.
Prerequisite: ECOL(BIOL) 3500-3500L.
Current ecological approaches used to quantify impacts of natural and human disturbances on ecosystem structure and function. Case studies illustrate impacts and management strategies in fields such as environmental toxicology, conservation ecology, agroecosystem ecology, and restoration ecology.

ECOL 3530-3530D. Conservation Ecology. 3 hours.
Prerequisite: ECOL(BIOL) 3500-3500L.
Application of ecological science to conservation/biodiversity issues; the role of scientists in designing solutions and formulating policies for conservation.

(ECOL)FORS 3580-3580L. Vertebrate Natural History. 5 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Life history strategies of vertebrates with emphasis on ecology, behavior, taxonomy, and systematics.

(ECOL)(BIOL)(EHSC)ENTO(LAND) 3590-3590L. Urban Entomology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: (BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L or permission of department.
Urban entomology, including identification, biology, and control of insects and selected arthropod pests with emphasis on the efficacy and environmental impact of pest control tactics in the urban habitat.

ECOL 3900. Directed Reading. 2-3 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Junior or senior standing and permission of department.
Detailed study of a restricted area of ecology through reading and discussion of original papers and reviews under the direction of a faculty supervisor.
Non-traditional format: Faculty members will arrange contact hours with individual student.

ECOL 3900H. Directed Reading (Honors). 2-3 hours. Repeatable for maximum 10 hours credit.
Prerequisite: (Junior or senior standing) and permission of department and permission of Honors.
Detailed study of a restricted area of ecology through reading and discussion of original papers and reviews under the direction of a faculty supervisor.
Non-traditional format: Faculty members will arrange contact hours with individual student.

ECOL 3910. Undergraduate Ecology Seminar. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of major.
Attendance is required at eight ecology lectures and a written review of each that is turned in to the undergraduate coordinator.

ECOL 4000/6000. Population and Community Ecology. 3 hours.
Prerequisite: ECOL(BIOL) 3500-3500L and MATH 2210.
The birth, death, and movement of organisms, with particular reference to population dynamics; the forces that structure communities of plants and animals.

ECOL 4010/6010. Ecosystem Ecology. 3 hours.
Prerequisite: ECOL(BIOL) 3500-3500L and MATH 2210.
Ecosystem structure and function with emphasis on energetic and biogeochemical processes in natural and managed ecosystems, from local to global scales.

ECOL 4020/6020-4020L/6020L. Field Systems Ecology. 4 hours. 2 hours lecture and 6 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L and MATH 2210 and MATH 2210L.
Ecology, field biology, and dynamic processes of terrestrial and aquatic ecosystems integrated by empirical monitoring and systems modeling within a campus watershed. Field trips to the Smoky Mountains and Georgia coast will extend the principles to a regional geographic scale.
Non-traditional format: The projects will be conducted on an unscheduled basis, requiring open access to laboratory and computer facilities.

ECOL 4030/6030-4030L/6030L. Mammalogy. 4 hours. 2 hours lecture and 6 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Taxonomy, distribution, ecology, and evolution of mammals.

ECOL 4040/6040-4040L/6040L. Herpetology. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Evolution, ecology, behavior, structure, and physiology of amphibians and reptiles.

ECOL 4050/6050-4050L/6050L. Ichthyology. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Taxonomy, distribution, ecology, evolution, and conservation of the marine and freshwater fishes.

ECOL 4060/6060-4060L/6060L. Ornithology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Identification, classification, life histories, evolution, and behavior of birds, with an emphasis on Georgia species.

ECOL 4070/6070-4070L/6070L. Invertebrate Zoology. 4 hours. 3 hours lecture and 6 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Functional morphology, taxonomy, phylogeny, and general biology of invertebrates.

ECOL 4110/6110. Insect Diversity. 4 hours. 1 hour lecture and 6 hours lab per week.
Prerequisite: Permission of department.
The biodiversity of tropical and temperate insects, including theoretical issues, natural history, and methods for study.

ECOL(EETH) 4200/6200. Ecological Values. 4 hours.
Prerequisite: Permission of department.
A general ecology course for non-science majors, which is a core course for the environmental ethics certificate. Based on lectures, readings, and laboratories. The course is designed to examine ecological phenomena from global patterns to individual interactions.

(ECOL)ANTH 4210/6210. Zooarchaeology.4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Animal remains recovered from archaeological sites, studied in light of zoological and archaeological methods and theories and interpreted in terms of human and animal behavior.

ECOL 4240/6240-4240L/6240L. Physiological Ecology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Physiological responses of organisms to environmental factors.

(ECOL)ANTH(BIOL)(BTNY)(ENTO) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

ECOL (ANTH) (BIOL) (BTNY) (ENTO) (FORS) (GEOG) (GEOL) (PATH) 4261. Museum of Natural History Internship. 3 hours. Repeatable for maximum 6 hours credit. 7 hours lab per week.
Prerequisite: Permission of instructor and permission of Museum of Natural History.
Supervised work experience with a natural history collection. Students will learn techniques and other procedures for curating materials in a collection of their choice under the direction of collection personnel.
Non-traditional format: Students will maintain regular, weekly work schedules totaling 7 hours per week under the supervision of faculty and other collection personnel associated with the Museum of Natural History.

(ECOL)ANTH 4290/6290. Environmental Archaeology. 3 hours.
Survey of theories and methods used to study the relationship between humans and their environment. Emphasis is on subsistence strategies and environmental reconstructions based on archaeological evidence and the techniques of zooarchaeology, paleobotany, and paleonutrition.

ECOL(FORS) 4310/6310-4310L/6310L. Limnology. 4 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L or FORS 3300.
Aquatic ecosystems (lakes and streams) and their biota. Linkages between terrestrial and aquatic ecosystems.

(ECOL) FORS 4360/6360. Fish Ecology. 4 hours.
Prerequisite: ECOL(BIOL) 3500-3500L or FORS 3020-3020L.
Prerequisite or corequisite: ECOL 4050/6050-4050L/6050L.
Lectures and discussions will be used to provide an interactive exploration of the ecology of fishes. Topics include: foraging, reproduction, habitat selection, niche, competition, and the mechanisms controlling fish biodiversity. Instruction includes both the status of a topic and appropriate research designs. The latter materials will be relevant to most animal taxa.

ECOL 4400H. Evolution of the Biosphere (Honors). 4 hours.
Prerequisite: ECOL(BIOL) 3500-3500L and CHEM 2211 and MATH 2210 and permission of Honors.
Critical evaluation of fundamental concepts and emerging ideas pertaining to the origin and maintenance of life; biological diversity and the role of biological diversity in biogeochemical cycles and ecosystem function.
Non-traditional format: Students must attend two hours of lecture each week as well as a two-hour discussion period. There are four regularly scheduled contact hours between the faculty member and students each week.

(ECOL)BTNY 4750/6750. Tropical Ecology and Conservation. 3 hours.
Prerequisite: BIOL 1107-1107L and BIOL 1108-1108L.
Patterns and processes in the origin, maintenance, and loss of the high biological diversity in the tropics, emphasizing particular communities and ecosystems, including tropical rainforest, tropical savannas, tropical islands, and coral reefs.

(ECOL)(ANTH)CRSS(GEOG)(HORT) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Prerequisite: Permission of department.
Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

(ECOL)(ANTH)CRSS(GEOG)(HORT) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3 hours. Repeatable for maximum 9 hours credit. 48 hours lab per week. Not open to students with credit in CRSS (ANTH)HORT 4940/6940.
Prerequisite: CRSS (ANTH)(ECOL)(GEOG) (HORT) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.
Non-traditional format: Students will tour a tropical country and receive on-site instruction at a series of different farms and ecological preserves over a period of 18 days.

ECOL 4940. Internship in Ecology. 2-4 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Supervised work experience with public agencies, non-profit environmental organizations, or industry concerning ecological topics.
Non-traditional format: Faculty members will arrange work hours with sponsoring agency. Faculty will arrange meetings with student to discuss progress.

ECOL 4950. Senior Seminar. 1 hour. Repeatable for maximum 3 hours credit.
Prerequisite: Senior standing or permission of department.
Discussion and critical appraisal of reports of original research and/or surveys of the technical literature in ecology. Students will be responsible for oral presentations on current topics.

ECOL 4960. Research. 2-4 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Junior or senior standing and permission of department.
Independent research in ecology under direction of individual faculty members.
Non-traditional format: Faculty members will arrange contact hours with individual student.

ECOL 4960H. Research (Honors). 2-4 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Junior or senior standing and permission of department and permission of Honors.
Independent research in ecology under direction of individual faculty members.
Non-traditional format: Faculty member will arrange contact hours with individual student.

ECOL 4990. Senior Thesis. 3 hours.
Prerequisite: ECOL 4960 and permission of department.
Preparation of a written thesis, based upon research carried out under direction of a faculty supervisor.
Non-traditional format: Faculty will arrange contact hours with individual student.

ECOL 4990H. Senior Thesis (Honors). 3-4 hours.
Prerequisite: ECOL 4960 and permission of Honors.
Preparation of a written thesis, based upon research carried out under direction of a faculty supervisor.
Non-traditional format: Faculty will arrange contact hours with individual student.

(ECON) Economics

Terry College of Business, Department of Economics

ECON 1100. Analysis of Strategic Games. 3 hours.
The analysis of players' strategies and their outcomes when each player's best strategy depends on the (expected) actions of others. Circumstances leading to both cooperative and noncooperative outcomes are considered, with economic and other applications.

ECON 2100. Economics of Environmental Quality. 3 hours.
Not open to students with credit in ECON 4150.
Prerequisite: ECON 2106 and ECON 2105.
The economic analysis of environmental issues, with discussions of current environmental quality problems, their underlying causes, and command vs. market-based solutions.

ECON 2105. Principles of Macroeconomics. 3 hours.
Explanations of economic growth and the business cycle, aimed at shedding light on economy-wide problems such as inflation and unemployment, with special attention to the role played by monetary and fiscal policies.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ECON 2105H. Principles of Macroeconomics (Honors). 3 hours.
Not open to students with credit in ECON 2105.
Prerequisite: Permission of Honors.
Explanations of economic growth and the business cycle, aimed at shedding light on economy-wide problems such as inflation and unemployment, with special attention to the role played by monetary and fiscal policies.

ECON 2106. Principles of Microeconomics. 3 hours.
Laws governing the use of scarce resources by producers and consumers in market economies, with emphasis on the role played by prices. The consequences of government involvement in the economy are studied, with examples taken from current policy issues.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ECON 2106H. Principles of Microeconomics (Honors). 3 hours.
Not open to students with credit in ECON 2106.
Prerequisite: Permission of Honors.
Laws governing the use of scarce resources by producers and consumers in market economies, with emphasis on the role played by prices. The consequences of government involvement in the economy are studied, with examples taken from current policy issues.

ECON 2200. Economic Development of the United States. 3 hours.
Not open to students with credit in ECON 2200H or ECON 4700/6700.
Prerequisite: ECON 2106 and ECON 2105.
The United States' growth and transformation into an industrialized nation, exploring the contributions of diverse cultural groups. The rise of the corporation, slavery, government regulation, banking, transportation, the economic role of women and minorities, the Great Depression, and rapid post-World War II growth.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ECON 2200H. Economic Development of the United States (Honors). 3 hours.
Not open to students with credit in ECON 2200 or ECON 4700/6700.
Prerequisite: ECON 2106 and ECON 2105 and permission of Honors.
The United States' growth and transformation into an industrialized nation, exploring the contributions of diverse cultural groups. The rise of the corporation, slavery, government regulation, banking, transportation, the economic role of women and minorities, the Great Depression, and rapid post-World War II growth.

ECON 4000. The Economics of Human Resources. 3 hours.
Not open to students with credit in ECON 4600/6600.
Prerequisite: ECON 2106 and ECON 2105.
The application of microeconomic principles to the study of the behavior of individuals and business firms in the labor market. The roles of private institutions and public policies in affecting worker compensation, employment, unemployment, and the distribution of labor-market earnings.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ECON 4010. Intermediate Microeconomics. 3 hours.
Prerequisite: ECON 2106 and ECON 2105 and MATH 2200 and MATH 2200L.
Resource allocation in a market economy, with an emphasis on the workings of the price system under competitive and monopolistic conditions. The welfare costs of departures from perfect competition are examined, and students are introduced to game theory and the economics of information.

ECON 4010H. Intermediate Microeconomics (Honors). 3 hours.
Not open to students with credit in ECON 4010.
Prerequisite: ECON 2105 and ECON 2106 and MATH 2200 and permission of Honors.
Resource allocation in a market economy, with an emphasis on the workings of the price system under competitive and monopolistic conditions. The welfare costs of departures from perfect competition are examined, and students are introduced to game theory and the economics of information.

ECON 4020. Intermediate Macroeconomics. 3 hours.
Prerequisite: ECON 2106 and ECON 2105 and MATH 2200 and MATH 2200L.
Theories aimed at explaining observed levels of national income, unemployment, inflation, interest rates, and exchange rates, with critical evaluations of alternative domestic and international fiscal and monetary policies.

ECON 4020H. Intermediate Macroeconomics (Honors). 3 hours.
Not open to students with credit in ECON 4020.
Prerequisite: ECON 2105 and ECON 2106 and MATH 2200 and permission of Honors.
Theories aimed at explaining observed levels of national income, unemployment, inflation, interest rates, and exchange rates, with critical evaluations of alternative domestic and international fiscal and monetary policies.

ECON 4030. Money and Banking. 3 hours.
Not open to students with credit in ECON 4100/6100.
Prerequisite: ECON 2106 and ECON 2105.
Money and banks in the economy, with lectures on financial intermediation, how interest rates are determined, domestic banking regulations, international banking and exchange rates, and monetary theory and policy.

ECON 4030H. Money and Banking (Honors). 3 hours.
Not open to students with credit in ECON 4030 or ECON 4100/6100.
Prerequisite: ECON 2106 and ECON 2105 and permission of Honors.
Money and banks in the economy, with lectures on financial intermediation, how interest rates are determined, domestic banking regulations, international banking and exchange rates, and monetary theory and policy.

ECON 4040. The International Business Environment. 3 hours.
Not open to students with credit in ECON 4550/6550.
Prerequisite: ECON 2106 and ECON 2105.
Trade, macroeconomic policy, and financial-market issues and theories of relevance to multinational firms, with applications to recent events.

ECON 4100/6100. Monetary Economics. 3 hours.
Not open to students with credit in ECON 4030 or ECON 4030H.
Prerequisite: ECON 4010 or ECON 4020.
Money and financial markets, emphasizing the evolution and economic rationale of money and financial institutions, determinants of the price level and interest rates, alternative monetary policies, and international monetary relations.

ECON 4150. Environmental Economics. 3 hours.
Prerequisite: ECON 4010.
The economic foundations of global environmental problems, including air and water pollution and the depletion of natural resources, with discussions of alternative (command and market-based) solutions.

ECON 4200. Economic Growth and Development. 3 hours.
Prerequisite: ECON 4010.
Problems and programs of economic growth; specific attention directed to underdeveloped areas, national economies, and regions. International agencies and coordinated efforts in economic development processes will be appraised within a theoretical reference.
Non-traditional format: This course is also offered through University System of Georgia Independent Study.

ECON 4300/6300. Public Sector Economics. 3 hours.
Prerequisite: ECON 4010.
Government's economic role, with discussions of what governments should (or shouldn't) do, and of what they do in fact. Major tax and spending programs are critically examined, and proposals for changing them are considered.

ECON 4350/6350. Industrial Economics. 3 hours.
Prerequisite: ECON 4010.
Firms' performances and conduct toward rival firms, suppliers, and customers under different market structures, including perfect competition and monopoly. The rationale and consequences of antitrust regulation and other public policies.

ECON 4400/6400. Economics of Public and Regulated Enterprises. 3 hours.
Prerequisite: ECON 4010.
The economic analysis of regulated and nationalized industries and organizations, with emphasis on the regulation of electric, natural gas, and telecommunications enterprises. Methods and implications of privatization of traditionally "public" enterprises are also considered.

ECON 4450/6450. Economic Analysis of Law. 3 hours.
Prerequisite: ECON 4010.
An efficiency-based perspective on major areas of the law, including contract, tort, and nuisance law, which points to the reduction of transactions costs as unifying legal principle.

ECON 4500/6500. Monetary Policy. 3 hours.
Prerequisite: ECON 4010 and (ECON 4030 or ECON 4030H or ECON 4100/6100).
The theory and practice of monetary policy, including discussions of rationales for government

involvement in money and banking, actual central bank behavior, the choice of monetary rules versus discretion, and how alternative monetary regimes might work.

ECON 4550/6550. International Trade: Theory and Policy. 3 hours.
Prerequisite: ECON 4010.
The determinants of world trade patterns, with discussions of immigration, capital mobility, interindustry trade, transfer payments, and recent developments in international trade policy.

ECON 4600/6600. Labor Economics. 3 hours.
Prerequisite: ECON 4010.
The application of microeconomics to the study of labor markets. The demand for and supply of labor, compensating wage differentials, human capital investment, alternative compensation policies, unions, discrimination, and unemployment.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ECON 4650/6650. Economics of Organizations and Management. 3 hours.
Prerequisite: ECON 4010.
Decision making within firms and public organizations, using standard microeconomic tools. Transaction costs and the size of the firm, the compensation and motivation of workers, mergers and corporate control, team production, and the theory of bureaucracy.

ECON 4700/6700. Economic History of the United States. 3 hours.
Prerequisite: ECON 4010.
Economic analysis is combined with historical narrative to explore the evolution of the United States' economy from its agrarian origins to its current status as an industrialized nation. Basic economic reasoning is used to explain the course, sources, and consequences of United States economic change, with particular emphasis on the twentieth century.

ECON(MARK) 4750/6750. Introduction to Econometrics. 3 hours.
Prerequisite: ECON 4010 and (STAT 2000 or MSIT 3000).
Estimation and hypothesis-testing techniques using the linear regression model, with emphasis on the least-squares estimator and its performance under different statistical assumptions. A hands-on approach, stressing a wide range of empirical applications.

ECON 4800. Internship and/or Cooperative Education. 3 hours.
Prerequisite: Junior standing and permission of department.
Prerequisite or corequisite: ECON 4010 and ECON 4020.
Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. An in-depth paper based on an approved economics topic is required.
Non-traditional format: Internship not involving formal lecture.

ECON 4850. Special Topics for Economics. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ECON 2105 and ECON 2106 and ECON 4010 and MATH 2200.
Intensive study relating to a central theme of special interest in the field of Economics.

ECON 4850H. Special Topics for Economics (Honors). 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ECON 2105 and ECON 2106 and permission of Honors.
Intensive study relating to a central theme of special interest in the field of Economics at the honors level.

ECON 5900. Senior Thesis. 1 hour.
Prerequisite or corequisite: ECON 4010.
An extensive economics research paper, written under the direction of a faculty member. This course should be taken during the term just prior to the student's planned graduation.
Non-traditional format: Directed study.

ECON 5900H. Senior Thesis (Honors). 3 hours.
Not open to students with credit in ECON 5900.
Prerequisite: ECON 4010 and senior standing and permission of Honors.
An extensive economics research paper, written under the direction of a faculty member. This course should be taken during the term just prior to the student's planned graduation.
Non-traditional format: Independent research and thesis preparation.

ECON 5960H. Tutorial (Honors). 1-9 hours.
Prerequisite: ECON 4010 and senior standing and permission of Honors.
Reading and independent research on a specified topic beyond normal course offerings and supervised by a faculty member.
Non-traditional format: Directed study. Students must apply to the department head at least five weeks in advance of registration.

ECON 5970H. Tutorial (Honors). 1-9 hours.
Prerequisite: ECON 4010 and senior standing and permission of Honors.
Reading and independent research on a specified topic beyond normal course offerings and supervised by a faculty member.
Non-traditional format: Directed study. Students

must apply to the department head at least five weeks in advance of registration.

ECON 5990. Economics Tutorial. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: ECON 4010 and senior standing.
Reading and independent research on a specified topic beyond normal course offerings and supervised by a faculty member.
Non-traditional format: Directed study. Students must apply to the department head at least five weeks in advance of registration.

(EDEC) Early Childhood Education

College of Education, Department of Elementary Education

EDEC 3000. Orienting Practicum. 1-4 hours. Repeatable for maximum 12 hours credit.
Short term (20-30 hours) field experience during which the student will observe and become minimally involved in the teaching/learning processes of each of the levels of early childhood education (nursery, kindergarten, and primary) coupled with occasional scheduled seminars.
Non-traditional format: Practicum.

EDEC 4000. Special Problems in Early Childhood Education. 1-3 hours. Repeatable for maximum 6 hours credit.
Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation in a special field or the collection and analysis of original data pertinent to a given problem.
Non-traditional format: Individual/special projects.

EDEC(CHFD) 4010. Orientation to Early Childhood Education. 1 hour.
Prerequisite: Permission of department.
Translation of theories about how children learn into ideas for application in the classroom. Bases for developmentally appropriate practices are examined in light of the students' own experiences as learners.

EDEC(CHFD) 4010L. Orientation to Early Childhood Education Laboratory. 1 hour. 1 hour lab per week.
Prerequisite: Permission of department.
Translation of theories about how children learn into ideas for application in the classroom. Bases for developmentally appropriate practices are examined in light of the students' own experiences as learners. Field experiences in classroom settings.

EDEC(CHFD) 4020. Decision Making for Planning, Teaching, and Organizing Early Childhood Classrooms. 3 hours.
Prerequisite: Permission of department.
Reflective decision making that incorporates the major themes, concepts, and skills involved in organizing, planning, and developing instruction in early childhood classrooms.

EDEC(CHFD) 4020L. Decision Making for Planning, Teaching, and Organizing Early Childhood Classrooms Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Reflective decision making that incorporates the major themes, concepts, and skills involved in organizing, planning, and developing instruction in early childhood classrooms. Field experiences in classroom settings.

EDEC(CHFD) 4030. Integrated Curricular Practices in Early Childhood Education. 3 hours.
Prerequisite: Permission of department.
Develop philosophical perspectives of teaching and classroom management, consider effective parent-teacher relations, and connect with the wider community as a resource context for teaching and learning. Plan and teach an integrated, thematic curriculum unit for prekindergarten through grade five as part of the field component.

EDEC(CHFD) 4030L. Integrated Curricular Practices in Early Childhood Education Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Develop philosophical perspectives of teaching and classroom management, consider effective parent-teacher relations, and connect with the wider community as a resource context for teaching and learning. Plan and teach an integrated, thematic curriculum unit for prekindergarten through grade five as part of the field component. Field experiences in classroom settings.

EDEC(CHFD) 4040. Special Topics in Early Childhood Education. 3 hours.
Corequisite: EDEC(CHFD) 5460.
A forum for issues of professionalism connected to professional teaching experiences. Topics may vary depending on student-generated issues and concerns.

EDEC 5000. Organization in Early Childhood Classrooms. 3 hours.
Investigation of early childhood education principles and practices which are germane to organizing and operating the classroom for learners in prekindergarten through grade five. Students will acquire knowledge of important theoretical approaches in this area as well as practical skills applicable to their work with young children.

(EDEC)EDMS 5060. Academic Community Learning. 3 hours.
History, rationale, research, methodology, and outcomes of service learning. Students will conceptualize, plan, and participate in a service learning project. Emphasis is on how service can be incorporated into curriculum with a primary focus on learning.

(EDEC)SPED 5100. Introduction to Early Childhood Special Education. 3 hours.
Prerequisite: Permission of department.
Meeting individual needs of children with disabilities in early childhood education environments. Emphases on methods for including young children with disabilities in typical environments. Topics include history and rationale for ECSE, family focused intervention, methods for teaming, embedding developmentally appropriate objectives in natural contexts.

(EDEC)CHFD 5150. Families, Schools, and Communities. 3 hours.
Prerequisite: EDEC(CHFD) 4020 and CHFD 4860/6860 and permission of department.
Families and their relationship with schools and communities. Implications for selected areas of practice, such as early childhood educational practices, emphasized.

(EDEC)(EDEL)EDMS(ELAN) 5180/7180. Understanding Cultural and Linguistic Diversity in Schools. 2 hours.
Not open to students with credit in ELAN 5040.
Undergraduate prerequisite: Permission of department.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L.
Influences of cultural pluralism on American education. Characteristics of culturally and linguistically diverse groups and the relationship among language, culture, and learning. Development of culturally responsive teaching strategies.

(EDEC)(EDEL)EDMS(ELAN) 5180L/7180L. Understanding Cultural and Linguistic Diversity in Schools Laboratory. 2 hours. 4 hours lab per week.
Not open to students with credit in ELAN 5040.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180/7180.
On-site in Mexico or other Spanish-speaking countries in Latin America, immersion in the country's social, cultural, and educational environments. Visits to schools and social agencies; discussion with preservice and inservice educators, and development of conversational Spanish abilities.

EDEC(CHFD) 5460. Student Teaching in Early Childhood Education. 3-15 hours.
A prekindergarten through grade five classroom teaching experience under the direction of a teacher and an early childhood education faculty member. Non-traditional format: Student teaching/field based in schools.

(EDEL) Elementary Education

College of Education, Department of Elementary Education

(EDEL)(EDEC)EDMS(ELAN) 5180/7180. Understanding Cultural and Linguistic Diversity in Schools. 2 hours.
Not open to students with credit in ELAN 5040.
Undergraduate prerequisite: Permission of department.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L.
Influences of cultural pluralism on American education. Characteristics of culturally and linguistically diverse groups and the relationship among language, culture, and learning. Development of culturally responsive teaching strategies.

(EDEL)(EDEC)EDMS(ELAN) 5180L/7180L. Understanding Cultural and Linguistic Diversity in Schools Laboratory. 2 hours. 4 hours lab per week.
Not open to students with credit in ELAN 5040.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180/7180.
On-site in Mexico or other Spanish-speaking countries in Latin America, immersion in the country's social, cultural, and educational environments. Visits to schools and social agencies; discussion with preservice and inservice educators, and development of conversational Spanish abilities.

(EDES) Environmental Design

School of Environmental Design

EDES 1500. Design and the Environment. 3 hours.
The built environment and its effects on natural systems. Focus is on the design of the built environment as an ongoing activity integrating ecological, social, and cultural values. Topics include land use patterns and policies, development and resource management, community design issues, and strategies for improving environmental integrity and quality of life.

EDES 2210. Design Communication I. 3 hours. 6 hours lab per week.
Manual and computerized drafting skills/design drawing with an emphasis on the development of basic visual and computer literacy.

EDES 2220. Design Communication II. 3 hours. 6 hours lab per week.
A continuation of Design Communication I, with emphasis on applying design drawing/presentation graphics and verbal presentation skills to express and explore design ideas.

EDES 2510. History of the Built Environment I. 3 hours.
Architecture, landscape architecture, and urban design from ancient times through the Renaissance. Emphasis is on the relationship between design of the built environment and socio-cultural, technological, aesthetic, and environmental factors.

EDES 2520. History of the Built Environment II. 3 hours.
Architecture, landscape architecture, and urban design from 1600 to the present. Emphasis is on the relationship between design on the built environment and socio-cultural, technological, aesthetic, and environmental factors.

EDES 3230. Design Communication III. 2 hours. 4 hours lab per week.
Prerequisite: EDES 2220.
Traditional and computer media and resource access or material and cultural resource analysis, and land planning. Skill development in GIS, electronic communication, process and presentation graphics.

EDES 4090/6090. Architectural Design. 4 hours. 8 hours lab per week.
Prerequisite: LAND 4060 or LAND 6020.
Major design determinants in architecture. Inquiry into structural, functional/programmatic, theoretical, and environmental issues will be focused on developing an understanding of the relationship between architecture and landscape.

EDES 4100/6100. Historic Preservation Design Studio. 4 hours. 8 hours lab per week.
An advanced design studio focused on contemporary preservation issues. Emphasis will be placed on new design and community planning.

EDES 4240. Design Communication IV. 2 hours. 4 hours lab per week.
Prerequisite: EDES 3230.
Advanced multimedia and desktop publishing techniques and their application to environmental design projects.

EDES 4250/6250. Advanced Computer-Aided Design. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: EDES 3230 or EDES 6220.
Lecture/studio in the use of computer-aided design software for the development of environmental design and land planning projects.

EDES 4260/6260. Computer Rendering and Animation. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: EDES 3230 or EDES 6220.
Lecture/studio in the use of computer rendering and animation software for the visualization of site design and land planning projects.

EDES 4270/6270. Environmental Design Uses of Geographic Information Systems. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: EDES 3230 or EDES 6220.
Lecture/studio in the use of geographic information systems software for the development of environmental design and land planning projects.

EDES 4610/6610. Vernacular Architecture. 3 hours.
Vernacular or folk architecture around the world and through history. Emphasis will be on how built form is a response to natural/physical and socio-cultural determinants. Both anthropological and art historical approaches to the subject will be explored.

EDES 4620/6620. Evolution of American Architecture. 3 hours.
Prerequisite: (EDES 2510 and EDES 2520) or EDES 6510.
History of American architecture from colonial times to World War II. Emphasis is on the development of both built form and the intellectual and social currents influencing that form.

EDES 4630/6630. The History and Theory of Twentieth-Century Architecture. 3 hours.
Prerequisite: EDES 2520 or permission of school.
The major monuments and theories of world architecture from the early modern period to the present. Major monuments will be presented in slide lecture; theory in readings and discussions.

EDES 4640/6640. The History of Urban Planning. 3 hours.
Prerequisite: (EDES 2510 and EDES 2520) or EDES 6510 or permission of school.
Major movements and monuments in the history of urban planning. The first half of the course will cover the world from ancient times to the present; the second half will focus on America from colonial times to the present.

EDES 4650/6650. City Planning. 3 hours.
The study of urban places. Planning processes and regulatory tools and techniques used by urban communities to achieve community goals and objectives.

EDES 4660/6660. Environment and Behavior: Theory and Practice. 2 hours.
The interactions and relationships between people

and their physical environments. Focuses on the social, behavioral, and cultural aspects of design.

EDES 4670/6670. History of Landscape Technology and Management. 2 hours.
Prerequisite: EDES 2520 or EDES 6510.
Technological influence upon attitudes toward nature and natural resources that result in a changed landscape.

EDES 4680/6680. Conservation of Culturally Significant Resources in Rural Areas. 2 hours.
Prerequisite: Junior standing.
The cultural evolution of rural landscapes in the United States. Exploration of approaches and methodologies used in identifying and protecting significant features, both natural and cultural, in a constantly changing environment.

EDES 4920/6920. Directed Study in Computer Application. 1-3 hours. Repeatable for maximum 9 hours credit. 2-6 hours lab per week.
Prerequisite: EDES 3230 or EDES 6220.
Supervised research into computer-generated visualizations as they may be applied in environmental design and land planning.

(EDHI) Higher Education

College of Education, Department of Higher Education

EDHI(HIST) 4900/6900. History of American College and University. 3 hours.
Prerequisite: HIST 2111 and HIST 2112.
History of American colleges and universities from 1619 to the present. Major topics include student life, European antecedents, the nature of the university, the impact of religion, the rise of athletics, the culture of collegiate life, and the influence of society.

(EDIT) Instructional Technology Education

College of Education, Department of Instructional Technology

EDIT 2000. Introduction to Computers for Teachers. 3 hours.
Not open to students with credit in EDIT 2010 or EDIT 2020.
The computer and its educational applications for preservice teachers. Computer-based education in the areas of instruction, text and data processing, multimedia, and telecommunications. Emphasis on integrating computer tools into class instruction.

EDIT 2010. Basic Instructional Technology Competencies. 2 hours. 1 hour lecture and 2 hours lab per week.
Not open to students with credit in EDIT 2000 or EDIT 2020.
Introduces the use of a variety of resources in teaching. Design and creation of products for learning environments using various technologies.

EDIT 2020. Teaching with Technology. 3 hours. 2 hours lecture and 2 hours lab per week.
Not open to students with credit in EDIT 2000 or EDIT 2010.
Focuses on creating teaching and learning environments using technology. Design and creation of products for learning environments will take place through numerous activities with various technologies. Activities anchored in a problem-centered context.

EDIT 2020H. Teaching with Technology (Honors). 3 hours.
Not open to students with credit in EDIT 2000 or EDIT 2010 or EDIT 2020.
Prerequisite: Permission of Honors.
Focuses on creating teaching and learning environments using technology. Design and creation of products for learning environments will take place through numerous activities with various technologies. Discussion groups, seminars, readings, covering the most recent innovations and trends in Instructional Technology will be an integral part of this class.
Non-traditional format: Lab hours are a part of this course and are included in the regularly scheduled three hours.

EDIT 4170/6170. Instructional Design. 3 hours.
Systematic procedures for designing, developing, evaluating, and revising instruction to meet identified goals and objectives.

EDIT 4180/6180. Instructional Development. 3 hours.
Prerequisite: EDIT 4170/6170.
Developing instructional materials for a defined context applying a learner-centered, systematic design philosophy. Working within a team environment while applying contemporary learning theories. Engaging in situational assessment, learner analysis, performance specification, test construction, strategies selection, materials design, and evaluation.

EDIT 4500/6500. Educational Television Production. 3 hours.
Design, production, and use of digital and analog video. Laboratory experiences with studio and portable cameras; editing and other equipment suitable for school use.

(EDMS) Middle School Education

College of Education, Department of Middle School Education

EDMS 4000. Special Problems in Middle School Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Independent study of issues related to middle school education.
Non-traditional format: Individual/special projects.

EDMS 5020. Educating Young Adolescents. 3 hours.
Prerequisite: Permission of department.
The concept of a separate organization and program for young adolescents, types of curricular plans for the middle school, aspects of teaching in the middle school, and the organization and staff of the middle school. A supervised field experience is included.

EDMS 5020L. Educating Young Adolescents Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Corequisite: EDMS 5020.
Field experiences in classroom and community settings. The field experiences illustrate the concept of a separate organization and program for young adolescents, types of curricular plans for the middle school, aspects of teaching in the middle school, and the organization and staff of the middle school.

EDMS 5030. The Middle School Curriculum. 3 hours.
Prerequisite: EDMS 5020.
Curriculum planning, implementation, and evaluation for teaching middle school students. A supervised field experience is included.

EDMS 5030L. Middle School Curriculum Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Corequisite: EDMS 5030.
Field experience in classroom and community settings. The field experiences illustrate curriculum planning, implementation, and evaluation for teaching middle school students.

EDMS 5040. Teaching in the Middle School. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: EDMS 5030.
Various roles of middle school teachers, with emphasis on classroom, team, school, and community issues.

EDMS 5040L. Teaching in the Middle School Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Corequisite: EDMS 5040.
Field experiences in classroom and community settings. The field experiences illustrate roles of middle school teachers, with emphasis on classroom, team, school, and community issues.

EDMS(EDEC) 5060. Academic Community Learning. 3 hours.
History, rationale, research, methodology, and outcomes of service learning. Students will conceptualize, plan, and participate in a service learning project. Emphasis is on how service can be incorporated into curriculum with a primary focus on learning.

EDMS(EDEC)(EDEL)(ELAN) 5180/7180. Understanding Cultural and Linguistic Diversity in Schools. 2 hours.
Not open to students with credit in ELAN 5040.
Undergraduate prerequisite: Permission of department.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L.
Influences of cultural pluralism on American education. Characteristics of culturally and linguistically diverse groups and the relationship among language, culture, and learning. Development of culturally responsive teaching strategies.

EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L. Understanding Cultural and Linguistic Diversity in Schools Laboratory. 2 hours. 4 hours lab per week.
Not open to students with credit in ELAN 5040.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180/7180.
On-site in Mexico or other Spanish-speaking countries in Latin America, immersion in the country's social, cultural, and educational environments. Visits to schools and social agencies; discussion with preservice and inservice educators, and development of conversational Spanish abilities.

EDMS 5460. Student Teaching in the Middle School. 1-15 hours.
Prerequisite: EDMS 5030.
Full-time laboratory experience in a middle grade during which the student assumes major responsibility for instruction.
Non-traditional format: Student teaching/field based in schools.

(EDUC) Education

College of Education

EDUC 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, readings, or projects under the direction of a faculty member.
Non-traditional format: Independent study under the direction of a faculty member.

EDUC 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, readings, or projects under the direction of a faculty member.
Non-traditional format: Independent study under the direction of a faculty member.

EDUC 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field or in a closely related field.
Non-traditional format: Independent research under the direction of a faculty member.

(EETH) Environmental Ethics

College of Arts and Sciences

EETH 3230. Environmental Values and Policy. 3 hours.
Introduction to issues in environmental philosophy and policy. Issues include environmental law and policy evaluation, population, economic efficiency, and environmental flourishing. The focus will be on the relevance of environmental values for our choices, our lives, and for the kinds of persons we should strive to become.

EETH 4000. Environmental Ethics Seminar. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Seminars in environmental ethics. Topics range from animal rights/animal welfare to ecofeminism and deep ecology.

EETH 4010. Undergraduate Research. 3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research project under the direction of a faculty member done independently of regularly scheduled classes.
Non-traditional format: Students will meet with faculty members on a regular basis.

EETH 4020/6020. Readings in Environmental Ethics. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Discussion of selected books and articles pertaining to environmental ethics.

EETH(AESC) 4190/6190. Agricultural Ethics. 1 hour. 2 hours lab per week.
Ethical issues in agriculture. Topics include animal rights/animal welfare, agriculture as a business/agriculture as a way of life, sustainable agriculture, (bio)technology, migrant farm workers, foreign aid, world hunger, and related topics.

(EETH)ECOL 4200/6200. Ecological Values. 4 hours.
Prerequisite: Permission of department.
A general ecology course for non-science majors, which is a core course for the environmental ethics certificate. Based on lectures, readings, and laboratories. The course is designed to examine ecological phenomena from global patterns to individual interactions.

(EETH)PHIL 4220/6220. Environmental Ethics. 3 hours.
Prerequisite: PHIL 2200 or any 3000-level PHIL course or permission of department.
Major professional and nonprofessional writings in the field of environmental ethics.

(EETH)PHIL 4250/6250. Technology and Values. 3 hours.
Prerequisite: Any 3000-level PHIL course or permission of department.
Technology in its broadest human context, with emphasis on the mutual influence between means and ends and the impact of technology on shaping the beliefs and attitudes of a civilization. Includes alternative assessments of technology and illustrates with specific crucial issues of our time.

EETH(JURI) 5870/7870. Environmental Dispute Resolution. 2 hours.
Conflict management, anatomy of negotiation, planning and conduct of negotiations, and resolving multiparty environmental disputes.

(EFCS) Family and Consumer Sciences Education

College of Education, Department of Occupational Studies

EFCS 4350. Curriculum Planning in Home Economics Education. 3 hours.
Content identification, program organization, preparation of instructional objectives, guidelines for selection and development of instructional materials for home economics education.

EFCS 5460. Student Teaching in Home Economics Education. 1-12 hours. Repeatable for maximum 12 hours credit.

Prerequisite: Permission of department.
Full-time supervised student-teaching experience in a secondary home economics education program.
Non-traditional format: Supervised full-time experience in school setting.

(EFND) Foundations of Education

College of Education, School of Teacher Education

EFND 2030. Foundations of Education. 3 hours. 2 hours lecture and 1 hour lab per week.
Prerequisite: Sophomore standing.
Contemporary and historical issues in American education, including the nature and purpose of schooling, the relationship between race, class, and gender and educational achievement, school reform, and the rights and responsibilities of teachers and students.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

(EHSC) Environmental Health Science

College of Agricultural and Environmental Sciences, Department of Environmental Health Science

EHSC 2010. Orientation to Environmental Health. 1 hour.
Environmental health science, including environmental protection, industrial hygiene, toxicology, risk assessment, and public health.

EHSC 3060. Introduction to Environmental Health Science. 3 hours.
The fundamentals of environmental health, covering environmental control agencies, elements of the environment suffering from pollution, environmental pollutants and their sources, effects of environmental pollution, and methods of pollution control.

EHSC 3260. Shelter and Institutional Environments. 2 hours.
Prerequisite: EHSC 3060 and MIBO 3500.
Environmental health practice associated with housing and special institutional environments.

(EHSC)(BIOL)(ECOL)ENTO(LAND) 3590-3590L. Urban Entomology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: (BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L or permission of department.
Urban entomology, including identification, biology, and control of insects and selected arthropod pests with emphasis on the efficacy and environmental impact of pest control tactics in the urban habitat.

EHSC 3700. Special Problems in Environmental Health Science. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Research or intensive study in a specialized area of environmental health under the direction of a staff member.
Non-traditional format: Students will meet with faculty members on a regular basis.

EHSC 3800. Environmental Health Seminar. 1 hour.
Prerequisite: Permission of department.
Selected topics in Environmental Health. Papers to be presented by students.

EHSC 3910. Internship in Environmental Health Science. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: EHSC 3060 and permission of department.
Practical work experience; familiarizes the student with various aspects of environmental health science.
Non-traditional format: Experiential education and training in a specialized area of environmental health science under the direction of a faculty member.

EHSC 4080/6080. Environmental Air Quality. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L.
Sources, control, and modeling of air pollution; effects of air pollutants on human health and the environment; atmospheric chemistry, indoor air quality, and regulatory issues.

EHSC 4100/6100-4100L/6100L. Industrial Hygiene. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: CHEM 2211 and CHEM 2211L.
The anticipation, recognition, evaluation, and control of those environmental factors, arising in or from the workplace, which can cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or among community citizens.

EHSC 4150/6150. Solid and Hazardous Waste Management. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L and MATH 1113 and STAT 2000.
Regulatory, chemical, and engineering aspects of solid and hazardous waste management, including RCRA, CERCLA, landfill and incinerator design, pollutant transport and fate, and potential for human health impacts.

(EHSC)AAEC 4250. Environmental and Public Health Law. 3 hours.
Not open to students with credit in AAEC 4930/6930.
Basic legal principles and procedures as they relate to environmental regulations and public health. Coverage of common law, torts, nuisances, regulatory standards, and state and federal environmental laws. Delineation of significant constitutional and federal regulations that affect managerial decisions.

EHSC(FDST)(MIBO) 4310/6310-4310L/6310L. Environmental Microbiology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: MIBO 3500.
Types of microorganisms in the environment; effect of environmental conditions on microbial existence; public health aspects of environmental microbiology; applications of microorganisms to solve environmental problems.

(EHSC)FDST(MIBO) 4320/6320-4320L/6320L. Microbiology of Food Sanitation. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: MIBO 3000-3000L or MIBO 3500.
Microorganisms and practices important in food industry sanitation and safety; microorganisms involved and control measures taken to prevent food borne illness, with emphasis on food process operations.

EHSC 4350/6350-4350L/6350L. Environmental Chemistry. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CHEM 2211 and CHEM 2211L and MATH 1113 and STAT 2000.
Chemical principles of environmental processes which result from natural or human-generated phenomena; air, water, and soil chemical reactions involving pollutants and wastes; measurement of pollutants in the environment.

EHSC 4490/6490. Environmental Toxicology. 3 hours.
Prerequisite: CHEM 2211 and CHEM 2211L and (BIOL 1104 and BIOL 1104L or BIOL 1108-1108L).
Extent and significance of toxic agents in the environment, and the physical, chemical, and biological processes which determine their behavior, fate, and ultimate effect on human health.

EHSC 4590/6590-4590L/6590L. Water and Wastewater. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: CHEM 2211 and CHEM 2211L.
Prerequisite or corequisite: MIBO 3000-3000L or MIBO 3500.
Chemistry and microbial life of water and wastewater, domestic and industrial, with scrutiny of current treatment processes. Sampling methods will be demonstrated. Effects of different types of waste on microbial population of rivers and streams.

EHSC 4610/6610. Water Pollution and Human Health. 3 hours.
Prerequisite: EHSC 3060.
Prerequisite or corequisite: CHEM 2211 and CHEM 2211L.
Human health issues related to water consumption and use, focusing on water contamination from municipal, industrial, and agricultural practices.

EHSC 4800/6800. Environmental Epidemiology. 3 hours.
Not open to students with credit in MMIB 4800.
Prerequisite: Permission of department.
The basics of epidemiology, relying on the Principles of Epidemiology Homestudy Manual from the Centers for Disease Control and Prevention. Utilizing this manual and lecture material, the students will understand how to incorporate epidemiologic tools into handling environmental health related concerns; topical infectious diseases.

(ELAN) Language Education

College of Education, Department of Language Education

ELAN 3110. Children's Literature and Oral Language, Grades P-5. 3 hours.
Wide reading from all genres of children's literature and criteria for selection and response. Students examine how literature can be used to facilitate reading, writing, speaking, and listening in content areas (e.g., social studies, science). Students are introduced to theory and research in language acquisition, development, and linguistic variation.

ELAN 3461. Issues in English Education, Grades 7-12. 3-9 hours. Repeatable for maximum 9 hours credit.
Community work with adolescents (mentoring, tutoring, etc.), common readings in education, and interactions with professional educators. English education majors build on individual and shared experiences and readings to examine issues of English education in public schools. They construct a portfolio of insights and experiences.
Non-traditional format: Discussion hour plus community service work.

ELAN 4000/6000. Independent Study in Language Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Selected topics related to teaching language arts or a foreign language.
Non-traditional format: Independent study with faculty member.

ELAN 4120. Language and Literacy, Grades P-5. 3 hours.
Recent theory and research on written language acquisition and development and linguistic variation. Students develop strategies for development of oral and written language in reading, language arts, and in the content areas.

ELAN 4400. Teaching as Planning in Context in English Education, Grades 7-12. 3 hours.
Prerequisite: Permission of department.
Corequisite: ELAN 4401 or ELAN 4410/6410 or ELAN 4460 or ELAN 4470.
Historical, political, economic, and social factors that influence how the language arts are taught, how schools operate, and how teachers function.

ELAN 4401. Teaching as Collaborative Inquiry in English Education, Grades 7-12. 3 hours.
Prerequisite: Permission of department.
Corequisite: ELAN 4400 or ELAN 4410/6410 or ELAN 4460 or ELAN 4470.
Literacy research for practitioners including research design, methodology, data analysis and interpretation for questions about students as readers/writers/language users.

ELAN 4410/6410. Adolescent Literature, Grades 7-12. 3 hours.
Prerequisite: Permission of department.
Corequisite: ELAN 4400 or ELAN 4401 or ELAN 4460 or ELAN 4470.
Adolescent literature and its selection and use in the middle school and high school to promote engagement with literature and as a bridge to the classics.

ELAN 4460. Supervised Field Experience in English Education, Grades 7-12. 3 hours.
Prerequisite: Permission of department.
Corequisite: ELAN 4400 or ELAN 4401 or ELAN 4410/6410 or ELAN 4470.
Observation and work in public school English classrooms.

ELAN 4462/6462. Student Teaching Seminar in English Education, Grades 7-12. 3 hours.
Prerequisite: ELAN 4400 or ELAN 4401 or ELAN 4410/6410 or ELAN 4460 or ELAN 4470.
Corequisite: ELAN 5460.
Issues of classroom teaching. Students plan for and examine their concurrent student teaching experience in light of research and theory, peers' experiences in other school settings, and their own teaching and learning histories.
Non-traditional format: Intensive two-week planning seminar prior to student teaching and two-week debriefing seminar following student teaching. Ten weeks of two-hour weekly discussions concurrent with student teaching.

ELAN 4470. Guided Field Research in English Education, Grades 7-12. 3 hours.
Prerequisite: Permission of department.
Corequisite: ELAN 4400 or ELAN 4401 or ELAN 4410/6410 or ELAN 4460.
Supervised observation and participation in school settings.

ELAN 4530. Foreign Language Curriculum and Methods, P-8. 3 hours.
Prerequisite: Permission of department.
Corequisite: ELAN 4531.
Foundations of second language learning, curricular and materials design, and methods of teaching foreign languages in the elementary and middle schools.

ELAN 4531. Foreign Language Curriculum and Methods, Grades 7-12. 3 hours.
Prerequisite: Permission of department.
Corequisite: ELAN 4530.
Curricular design of foreign languages and the techniques and strategies for teaching and evaluating language acquisition.

ELAN 4630/6630. TESOL Methods and Materials for Adult Learners. 3 hours.
Principles, methods, materials, and activities for the teaching of English to adult speakers of other languages.

ELAN 5030. American Language and Cultural Studies for International Students. 3 hours.
Designed to help international students develop advanced English skills in understanding academic lectures, comprehending reading materials, speaking with grammatical accuracy and acceptable pronunciation, and writing for academic purposes.

ELAN 5040/7040. Language and Culture in the Classroom. 3 hours.
Exploration of topics on the relationship between language and culture and on pedagogical principles of multicultural education.

(ELAN)(EDEC)(EDEL)EDMS 5180/7180. Understanding Cultural and Linguistic Diversity in Schools. 2 hours.
Not open to students with credit in ELAN 5040.
Undergraduate prerequisite: Permission of department.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180L/7180L.
Influences of cultural pluralism on American education. Characteristics of culturally and linguistically diverse groups and the relationship among language, culture, and learning. Development of culturally responsive teaching strategies.

(ELAN)(EDEC)(EDEL)EDMS 5180L/7180L. Understanding Cultural and Linguistic Diversity in Schools Laboratory. 2 hours. 4 hours lab per week.
Not open to students with credit in ELAN 5040.
Corequisite: EDMS(EDEC)(EDEL)(ELAN) 5180/7180.
On-site in Mexico or other Spanish-speaking countries in Latin America, immersion in the country's social, cultural, and educational environments. Visits to schools and social agencies; discussion with preservice and inservice educators, and development of conversational Spanish abilities.

ELAN 5200. Literature and Language Arts Across the Curriculum, Grades 4-8. 3 hours.
Uses writing as a teaching strategy in elementary and middle school content area classrooms. Students experience writing as a process to develop their writing skills, plan content area assignments, evaluate writing, and understand how young people think about and learn content material through writing.

ELAN 5210. Children's Literature and Oral Language, Grades 4-8. 3 hours.
Children's and adolescent literature appropriate for elementary and middle school students, including development of criteria for book selection, strategies for promoting enjoyment and appreciation, and methods for responding to diverse literature.

ELAN 5220. Writing Pedagogy, Grades 4-8. 3 hours.
Strategies for building a literate learning community. Students write fiction, poetry, and information texts, engaging in as well as studying the pedagogy of writing development, conference, revision, assessment, and publishing.

ELAN 5312/7312. Poetry, Grades P-8. 3 hours.
Poems and enrichment activities for use in elementary and middle school classes; ways of encouraging children to respond to published poetry, to understand poetic devices, and to write poetry.

ELAN 5314/7314. Informational Literature, Grades P-8. 3 hours.
Reading of informational literature and examining selection criteria and ways to integrate informational books into language arts and content area curricula appropriate for preschool through 8th grade.

ELAN 5318/7318. Culturally Diverse Children's Literature, Grades P-8. 3 hours.
Prerequisite: Undergraduate level only: ELAN 5210; Graduate level only: ELAN 6310 or ELAN 7310.
Children's fiction, poetry, and nonfiction literature dealing with the experiences of diverse cultures comprising American society. Development of criteria for evaluation and strategies for incorporating literature into the curriculum.

ELAN 5332/7332. Drama, Grades P-8. 3 hours.
Integrating drama across the curriculum, including improvisational process drama, connecting to issues associated with children's literature, reading, writing, storytelling, and thematic oriented units of study with students in grades prekindergarten through middle school.

ELAN 5390/7390. Difficulties in Literacy Teaching and Learning, Grades P-8. 3 hours.
Issues related to preschool through 8th grade readers and writers with diverse learning paths, including learning disabilities, English as a second language, and histories of school failure. Effective teaching strategies include culturally-responsive teaching, student-generated curriculum and assessment links, interdisciplinary connections, and family involvement.

ELAN 5460. Student Teaching in English Education, Grades 7-12. 1-12 hours.
Prerequisite: ELAN 4400 or ELAN 4401 or ELAN 4410/6410 or ELAN 4460 or ELAN 4470.
Corequisite: ELAN 4462/6462.
Student teaching English in the public school setting under the supervision of faculty members.
Non-traditional format: Student teaching in public school setting.

ELAN 5540. Creating Learning Communities in the Languages Other Than English (LOTE) Classroom. 3 hours.
Prerequisite: Permission of department.
Corequisite: ELAN 4530 and ELAN 4531.
Explores the interconnections between language, learning, and culture and helps students develop the skills and knowledge needed for building effective classroom communities of learners of additional languages.

ELAN 5550. Field-Based Practicum in Foreign Language Education, Grades P-12. 3 hours.
Prerequisite: ELAN 4530 and ELAN 4531 and permission of department.
Corequisite: ELAN 5560.
Provides orientation to foreign language education in public school settings through class discussions, and on-site observations and experiences.
Non-traditional format: Field-based experience in public school foreign language classrooms (five-ten hours per week).

ELAN 5555. Supervised Foreign Language Internship. 3-12 hours.
Prerequisite: ELAN 4530 and ELAN 4531 and permission of department.

Supervised foreign language internship in a public school for teachers employed with a provisional certificate.
Non-traditional format: Supervised teaching in public schools.

ELAN 5560. Student Teaching in Foreign Language Education, Grades P-12. 3-12 hours.
Prerequisite: ELAN 4530 and ELAN 4531 and permission of department.
Corequisite: ELAN 5550.
Student teaching in a public school under supervision of a faculty member.
Non-traditional format: Student teaching in public school setting.

ELAN 5630/7630. ESOL, Grades P-12. 3 hours.
Foundations of second language learning, curricular and materials design, and methods of teaching nonnative speakers of English in primary through secondary school settings.

ELAN 5730/7730. First and Second Language Acquisition and Development. 3 hours.
Native and second language acquisition processes, with attention to regional, social, and functional variation in language and contrasts between English and other selected languages.

(EMAT) Mathematics Education

College of Education, Department of Mathematics Education

EMAT 2000. Foundations of Mathematics Education. 3 hours.
Prerequisite or corequisite: (MATH 2210 and MATH 2210L) or permission of department.
Role of mathematics in society; contemporary issues in mathematics education; role of professional mathematics educator, including ethical and effective practice; social, historical, and philosophical perspectives and methods of inquiry in analysis of mathematics education issues; and sociological and psychological bases for learning mathematics. Technologies used in teaching mathematics.

EMAT 3400. Children's Mathematical Learning. 3 hours.
Prerequisite: MATH 5001/7001 or permission of department.
Children's mathematical learning from pre-numerical stages through the acquisition of advanced numerical and spatial processes and operations. Research-based development of a theory of children's learning. Includes field component.

EMAT 3410. Mathematics Teaching and Curriculum in PreK-5th Grade. 3 hours.
Prerequisite: EMAT 3400.
Mathematics teaching and curriculum in preK through 5th grade. Content and materials appropriate for preK through 5th grade mathematics curriculum is integrated with an analysis of mathematics teaching, including the use of technology. Includes a field component.

EMAT 3450. School Practicum in Secondary Mathematics. 1-2 hours. Repeatable for maximum 2 hours credit.
A school-based planned practicum experience.
Non-traditional format: Part-time practicum in school.

EMAT 3500. Concepts in Secondary School Mathematics. 3 hours.
Prerequisite: MATH 2210 and MATH 2210L.
The basic concepts in the secondary mathematics curriculum, including concepts from algebra, functions, shape and space, and number systems.

EMAT 4000/6000. Special Problems in Mathematics Education. 1-6 hours. Repeatable for maximum 9 hours credit.
Topics in mathematics education.
Non-traditional format: Independent study.

EMAT 4200/6200. Technology in Teaching Elementary School Mathematics. 3 hours.
Prerequisite: Permission of department.
Use of technological tools in teaching elementary mathematics. Current computer software for mathematical explorations.

EMAT 4360/6360. Teaching and Learning Secondary School Mathematics. 3 hours.
Prerequisite: EMAT 4680/6680 and permission of department.
Corequisite: EMAT 5360/7360.
Instructional strategies, classroom management, assessment techniques, lesson planning, multicultural and gender issues in mathematics education.

EMAT 4500/6500. Connections in Secondary School Mathematics. 3 hours.
Prerequisite: [EMAT 3500 or (MATH 2210 and MATH 2210L)] or permission of department.
The secondary mathematics curriculum, with attention to applications of mathematics and to connections within mathematics and between mathematics and other subjects.

EMAT 4550/6550. Contemporary School Mathematics. 3 hours.
Prerequisite: [EMAT 3500 or (MATH 2210 and MATH 2210L)] or permission of department.
The contemporary secondary and collegiate mathematics curriculum, with an emphasis on data han-

dling, modeling, infinite processes, stochastic processes, and discrete mathematics.

EMAT 4600/6600. Problem Solving in Mathematics. 3 hours.
Prerequisite: [EMAT 3500 or (MATH 2210 and MATH 2210L)] or permission of department.
Mathematical problems with emphasis on exploring various mathematical contexts, on posing and extending problems, and on communicating mathematical problems and solutions.

EMAT 4650/6650. Historical and Cultural Foundations of Mathematics. 3 hours.
Prerequisite: [EMAT 3500 or (MATH 2210 and MATH 2210L)] or permission of department.
Development of mathematics across time, geography, and cultures with attention to the content of school mathematics.

EMAT 4680/6680. Technology and Secondary School Mathematics. 3 hours.
Prerequisite: MATH 2210 and MATH 2210L.
Mathematical investigations appropriate to the secondary school using various technology tools.

EMAT 4690/6690. Technology Enhanced Instruction in Secondary School Mathematics. 3 hours.
Prerequisite: MATH 2210 and MATH 2210L.
Use of technology in mathematics instruction and development of materials for mathematics instruction enhanced by technology.

EMAT 4700/6700. Advanced Explorations with Technology in Mathematics Instruction. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: MATH 2210 and MATH 2210L.
Use of technology in mathematics instruction, with an emphasis on the organization of materials for secondary mathematics courses.

EMAT 4950/6950. Professional Seminar in Teaching Mathematics. 3 hours.
Prerequisite: EMAT 4360/6360.
Corequisite: EMAT 5460/7460.
Issues identified from the student teaching experience in mathematics with consideration of various avenues for professional development.

EMAT 5280/7280. Teaching Number Systems in the Middle School. 3 hours.
Prerequisite: MATH 2200 and MATH 2200L and permission of department.
Corequisite: MATH 5020/7020.
Didactics of number systems for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing natural, integer, rational, and real number structures. Evaluation through the examination of mathematics content, with emphasis on the mathematical operations, models, and problem solving.

EMAT 5290/7290. Teaching Geometry and Measurement in the Middle School. 3 hours.
Prerequisite: EMAT 5280/7280.
Corequisite: MATH 5030/7030.
Didactics of geometry for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing geometric and measurement concepts. Evaluation through the examination of mathematics content, with emphasis on statistics, probability, and mathematical applications.

EMAT 5310/7310. Teaching Mathematics in the Middle School. 3 hours.
Prerequisite: EMAT 5290/7290.
Methods and materials for teaching mathematics in the middle school, with emphasis on integration of mathematical topics.

EMAT 5320/7320. Teaching Algebra in the Middle School. 3 hours.
Prerequisite: EMAT 5290/7290.
Didactics of algebra and number theory for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing algebraic concepts.

EMAT 5360/7360. Secondary School Mathematics Field Experience. 3 hours.
Prerequisite: EMAT 4680/6680 and permission of department.
Corequisite: EMAT 4360/6360.
Supervised observations, interviews, tutoring, teaching practice, and professional goal development.
Non-traditional format: Forty-five hours of field work per semester.

EMAT 5460/7460. Student Teaching in Secondary School Mathematics. 1-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: EMAT 4360/6360.
Corequisite: EMAT 4950/6950.
Supervised mathematics teaching in a secondary school.
Non-traditional format: In school for ten weeks, all day.

(EMKT) Marketing Education

College of Education, Department of Occupational Studies

EMKT 4100/6100. Economic Foundations for Work-Based Education. 3 hours.
Economic principles and concepts of free-market economies in work-based education programs, with emphasis on instructional approaches.

EMKT 4110/6110. Marketing and Business Foundations of Work-Based Education. 3 hours.
Business and marketing concepts, business environments, and managerial systems in work-based education, with emphasis on instructional strategies.

EMKT 4120/6120. Human Resource Foundations in Work-Based Education. 3 hours.
Human relations, communications, mathematics, management, and career development in work-based education programs, with emphasis on instructional strategies.

EMKT 4350. Curriculum Planning in Marketing Education. 3 hours.
Prerequisite: Permission of department.
Content identification, program organization, preparation of instructional objectives, and guidelines for selection and development of instructional materials for marketing education.

EMKT 5460. Student Teaching in Marketing Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Full-time supervised student teaching experience in an existing marketing education program.
Non-traditional format: Supervised full-time experience in school setting.

(EMUS) Music Education

College of Education

EMUS 4000. Special Problems in Music Education. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Specialized training in music education appropriate to the needs of the individual.

EMUS 5460. Senior Practicum. 12 hours. Repeatable for maximum 13 hours credit.
Prerequisite: Permission of department.
Teaching assignment at appropriate level school with practicum/seminar component prior to field experience.
Non-traditional format: This course involves supervised student teaching at an approved site and, as such, involves various instructional modes that will require an eight-hour per day commitment from the student for the majority of the semester the course is taken.

(ENGL) English

College of Arts and Sciences, Department of English

(ENGL)ACAE 0097. Fundamentals of Effective Writing. 3 hours.
Covers major sentence and syntax errors and basic organization of paragraphs and short narrative and expository papers. Writing topics include personal and expository topics. Emphasis on drafting and revising.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(ENGL)ACAE 0098. Basic Composition for Multilingual Writers. 3 hours.
Not open to students with credit in ACAE(ENGL) 0099.
For multilingual students only. Course covers elements of effective style, careful proofreading, logical organization, and convincing development of expository and persuasive essays. Emphasis on problems multilingual students typically experience with proofreading, revision, and writing for an American academic audience.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(ENGL)ACAE 0099. Basic Written Composition. 3 hours.
Not open to students with credit in ACAE(ENGL) 0098.
Covers elements of effective style, careful proofreading, logical organization, and convincing development of college-length expository and persuasive essays. Emphasis on proofreading, revision, and analytic and interpretive thinking and writing.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(ENGL)RGTE 0199. Review of Written English. 3 hours.
Prerequisite: Permission of department.
Review of usage, sentence structure, mechanics of writing, diction, paragraph structure, and theme development. A refresher course in the elements of composition. May not be used for graduation credit.
Non-traditional format: Most students will elect to complete requirements through directed study. This course carries institutional credit and will not count toward graduation.

ENGL 1030. Multicultural English Composition. 3 hours.
Not open to students with credit in ENGL 1050H or ENGL 1060H or ENGL 1102.
Prerequisite: ENGL 1101.
Themes on fiction, poetry, and drama using multicultural literature.

ENGL 1050H. Composition and Literature (Honors). 3 hours.
Not open to students with credit in ENGL 1030 or ENGL 1060H or ENGL 1102.
Prerequisite: ENGL 1101 and permission of Honors.
Close analysis of literary works as the basis of effective critical writing.

ENGL 1060H. Composition and Multicultural Literature (Honors). 3 hours.
Not open to students with credit in ENGL 1102 or ENGL 1030 or ENGL 1050H.
Prerequisite: ENGL 1101 and permission of Honors.
Close analysis of multicultural literary works as the basis of effective critical writing.

ENGL 1101. English Composition I. 3 hours.
Expository themes on both general and literary topics developed by basic rhetorical methods.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 1102. English Composition II. 3 hours.
Not open to students with credit in 1030 or ENGL 1050H or ENGL 1060H.
Prerequisite: ENGL 1101.
Themes on fiction, poetry, and drama.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 2310. English Literature from the Beginnings to 1700. 3 hours.
Not open to students with credit in ENGL 2350H.
Prerequisite: ENGL 1102 or ENGL 1030.
Writers typically include the *Beowulf* poet, *Gawain* poet, Chaucer, Spenser, Sidney, Marlowe, Donne, Jonson, Shakespeare, and Milton.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 2320. English Literature from 1700 to the Present. 3 hours.
Not open to students with credit in ENGL 2360H.
Prerequisite: ENGL 1102 or ENGL 1030.
Writers typically include Pope, Swift, Johnson, Blake, Wordsworth, Coleridge, Keats, Tennyson, Arnold, Browning, one or two nineteenth-century novelists, Yeats, Woolf, and Joyce.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 2330. American Literature from the Beginnings to 1865. 3 hours.
Not open to students with credit in ENGL 2370H.
Prerequisite: ENGL 1102 or ENGL 1030.
Significant work by writers in America from the seventeenth-century colonists through the Revolution to the Civil War. Writers may include Anne Bradstreet, Benjamin Franklin, Washington Irving, Nathaniel Hawthorne, Ralph Waldo Emerson, Frederick Douglass, Herman Melville, Harriet Beecher Stowe, Emily Dickinson.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 2340. American Literature from 1865 to the Present. 3 hours.
Not open to students with credit in ENGL 2380H.
Prerequisite: ENGL 1102 or ENGL 1030.
Significant work by American writers between the end of the Civil War and the present. Writers may include Mark Twain, Henry James, Edith Wharton, William Faulkner, Langston Hughes, T.S. Eliot, Zora Neale Hurston, Richard Wright, Elizabeth Bishop, Saul Bellow, and Adrienne Rich.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 2350H. English Literature from the Beginnings to 1700 (Honors). 3 hours.
Not open to students with credit in ENGL 2310.
Prerequisite: (ENGL 1102 or ENGL 1030) and permission of Honors.
Writers typically include the *Beowulf* poet, *Gawain* poet, Chaucer, Spenser, Sidney, Marlowe, Donne, Jonson, Shakespeare, and Milton.

ENGL 2360H. English Literature from 1700 to the Present (Honors). 3 hours.
Not open to students with credit in ENGL 2320.
Prerequisite: (ENGL 1102 or ENGL 1030) and permission of Honors.
Writers typically include Pope, Swift, Johnson, Blake, Wordsworth, Coleridge, Keats, Tennyson, Arnold, Browning, one or two nineteenth-century novelists, Yeats, Woolf, and Joyce.

ENGL 2370H. American Literature from the Beginnings to 1865 (Honors). 3 hours.
Not open to students with credit in ENGL 2330.
Prerequisite: (ENGL 1102 or ENGL 1030) and permission of Honors.
Significant work by writers in America from the seventeenth-century colonists through the Revolution to the Civil War, including Anne Bradstreet, Benjamin Franklin, Washington Irving, Nathaniel Hawthorne, Ralph Waldo Emerson, Frederick Douglass, Herman Melville, Harriet Beecher Stowe, and Emily Dickinson.

ENGL 2380H. American Literature from 1865 to the Present (Honors). 3 hours.
Not open to students with credit in ENGL 2340.
Prerequisite: (ENGL 1102 or ENGL 1030) and permission of Honors.

Significant work by American writers between the end of the Civil War and the present including Mark Twain, Henry James, Edith Wharton, William Faulkner, Langston Hughes, T.S. Eliot, Zora Neale Hurston, Richard Wright, Elizabeth Bishop, Saul Bellow, and Adrienne Rich.

ENGL 2390H. Multicultural Literature in America (Honors). 3 hours.
Not open to students with credit in ENGL 2400.
Prerequisite: (ENGL 1102 or ENGL 1030) and permission of Honors.
Important writers and movements in the mosaic of American culture and literature with special attention to African American, Native American, Hispanic American, and Asian American literatures.

ENGL 2400. Multicultural Literature in America. 3 hours.
Not open to students with credit in ENGL 2390H.
Prerequisite: ENGL 1102 or ENGL 1030.
Important writers and movements in the mosaic of American culture and literature with special attention to African American, Native American, Hispanic American, and Asian American literatures.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 3000. Introduction to English Studies. 3 hours.
Prerequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The skills and knowledge necessary for successful pursuit of a degree in English: close reading, critical writing, acquaintance with current theoretical issues, and familiarity with bibliographic and electronic resources. Required of all English majors.

ENGL 3010. Introduction to Folklore. 3 hours.
Prerequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The discipline of folklore, its aims, methods, and subject matter. The major genres of verbal folklore—folk speech, proverbs, riddles, rhymes, legends, folktales, ballads, and folksong—along with folk customs, festivals, and material culture.

(ENGL)LING 3020. Language Variation. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
Theory and assessment of regional and social language variation within one language, including the relationship of variation to language change. Historical and present-day illustrations come primarily from English, with consideration of the significance of language variation in our modern social context.

ENGL(LING) 3030. Introduction to the English Language. 3 hours.
Prerequisite: ENGL 1102 or ENGL 1030.
The history, structure, and modern varieties of the English language.

ENGL 3050. Introduction to Poetry. 3 hours.
Prerequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
Formal and thematic traditions of poetry in English, with emphasis on techniques of reading and of writing critical essays.

ENGL(HIST) 3100. Introduction to British Culture I. 3 hours.
Prerequisite or corequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or CMLT 2250H or CMLT 2260H or ENGL 2310 or ENGL 2320 or ENGL 2340 or ENGL 2350H or ENGL 2360H or ENGL 2370H or ENGL 2380H or ENGL 2390H or ENGL 2400.
Interdisciplinary, writing-intensive course in British literature and history for University of Georgia at Oxford students. Readings organized around geographical sites in Britain using newest Web technologies.
Non-traditional format: Web-based remote delivery course that students will take from their hometowns during the "downtime" between the start of the spring semester at the University of Georgia and the beginning of the Oxford Trinity term.

ENGL(HIST) 3110. Introduction to British Culture II. 3 hours.
Prerequisite or corequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or CMLT 2250H or CMLT 2260H or ENGL 2310 or ENGL 2320 or ENGL 2340 or ENGL 2350H or ENGL 2360H or ENGL 2370H or ENGL 2380H or ENGL 2390H or ENGL 2400.
Corequisite: ENGL(HIST) 3100.
Interdisciplinary, writing-intensive course in British literature and history for University of Georgia at Oxford students. Readings organized around geographical sites in Britain using newest Web technologies.
Non-traditional format: Web-based remote-delivery course. Course will be offered via the Web during "downtime" between start of the University of Georgia's spring semester and Oxford term.

(ENGL)LING 3150. Generative Syntax. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
Techniques and formalisms for analyzing syntactic phenomena of human languages within the framework of generative grammar. Examples will be drawn primarily from English.

ENGL(AFAM) 3230. Development of African American Literature. 3 hours.
Prerequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400
African American literature since 1773, particularly 1830 to the present: Frederick Douglass, Harriet Jacobs, Zora Neale Hurston, Langston Hughes, Richard Wright, Dorothy West, Ralph Ellison, James Baldwin, Alice Childress, Lorraine Hansberry, Amiri Baraka, Toni Morrison, Alice Walker, and August Wilson, including diverse voices rooted in the folk origins for literary forms.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 3300. Women in Literature. 3 hours.
Prerequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
Reading and analysis of works in British and American literature by and about women.

ENGL 3590. Technical and Professional Communication. 3 hours.
Prerequisite: ENGL 1102 or ENGL 1030.
Writing in the professional domains, with an emphasis on research methods, clear and accurate presentation of ideas and data, and computer-mediated communication.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 3600. Advanced Composition. 3 hours.
Prerequisite: ENGL 1102 or ENGL 1030.
Writing as a process, with an emphasis on the conventions of discourse situations, invention, revision, editorial skills, and document design.

ENGL 3610. Introduction to Fiction. 3 hours.
Prerequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400
Short fiction in English, with some attention to historical development of the genre, narrative techniques, and the development of critical strategies for reading and writing.

ENGL 3650. Introduction to Drama. 3 hours.
Prerequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
Drama in English. Focus may be historical development of the genre, representative themes, the relation between theory and practice, or the relation between text and performance. The course will include critical writing.

ENGL 3800. Introduction to Creative Writing. 3 hours.
Prerequisite: ENGL 1102 or ENGL 1030.
Elements of writing poetry, fiction, and creative non-fiction through selected readings and discussion of student writing.

ENGL(LING) 4000/6000. History of the English Language. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The development of present English through the stages of Old English, Middle English, and early Modern English. Study of elementary phonetics, phonemics, sound change, and dialect variation.

ENGL(LING) 4010/6010. American English. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
The history, present status, and future prospects of American English, including standards and internal variation.

ENGL(LING)(AFAM) 4040. Language Use in the African American Community. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
History and structure of the speech and language styles used in the African American community; examination of linguistic and cultural issues that confront the majority of African Americans; the role of the vernacular language of African Americans in society.

ENGL(LING) 4060/6060. Old English. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The language and literature of England before the Norman Conquest, with reading of selected texts.

ENGL(LING) 4100/6100. Lexicography. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
Principles and methods of dictionary making with emphasis on monolingual English and bilingual dictionaries. Topics may include typology of dictionaries and dictionary users, the history of lexicography, the collection and selection of headwords and examples; the definition style, pronunciation, labeling, translation equivalents, etymology, illustrations, and encyclopedic information.

ENGL(LING) 4110/6110. English Grammar. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or

CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
English grammar in the scholarly tradition of Curme and Jespersen.

ENGL(LING) 4170/6170. Second Language Acquisition. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4110/6110 or LING 2100.
Linguistic theories of second language acquisition, with emphasis on the acquisition of English. Topics include order of acquisition, sociocultural factors with linguistic bases, and neurolinguistic models.

ENGL(LING) 4180/6180. ESL Error Analysis. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4110/6110 or LING 2100.
Psycholinguistic theory applied to problems in second language learning, and the prediction of language behavior through the use of contrastive analysis.

ENGL(LING) 4190. Topics in the English Language. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
A special topic not otherwise offered in the English curriculum. Topics and instructors vary from semester to semester.

ENGL 4210/6210. Old English Literature. 3 hours.
Prerequisite: ENGL(LING) 4060/6060 and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Prose and poetry of the Old English period, exclusive of *Beowulf*, with emphasis on poetry. Works will be read in Old English, with supplementary translations.

ENGL 4220/6220. Beowulf. 3 hours.
Prerequisite: ENGL(LING) 4060/6060 and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2210 or CMLT 2111 or CMLT 2212 or CMLT 2220).
The poem in the original Old English, with attention to important critical studies.

ENGL 4230. Medieval Literature. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Masterpieces of medieval literature, exclusive of Chaucer. Some works will be read in Modern English translation.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 4240/6240. Chaucer. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Canterbury Tales, *Troilus and Criseyde*, and minor poems.

ENGL 4290. Topics in Medieval Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
A special topic not otherwise offered in the English curriculum. Topics and instructors vary from semester to semester.

ENGL 4300/6300. Elizabethan Poetry. 3 hours.
Prerequisite:: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Poetry of the earlier English Renaissance, such as works by Wyatt, Surrey, Sidney, Spenser, and Marlowe, and the sonnets of Shakespeare.

ENGL 4320/6320. Shakespeare: Part I. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The early plays of Shakespeare.

ENGL 4330/6330. Shakespeare: Part II. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The later plays of Shakespeare.

ENGL 4340/6340. Renaissance Drama. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
English drama from 1576 to 1642, exclusive of Shakespeare, emphasizing dramatists such as Marlowe, Jonson, Webster, and Middleton.

ENGL 4350/6350. Seventeenth-Century Poetry. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Major English poets of the period, such as Donne, Jonson, Herbert, and Marvell.

ENGL 4360. Renaissance Prose. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2210 or CMLT 2220).
Prose of the sixteenth and seventeenth centuries, such as works by More, Sidney, Bacon, Donne, Browne, and Bunyan.

ENGL 4370. Milton. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The works and times of John Milton.

ENGL 4390. Topics in Renaissance Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2210 or CMLT 2220).
A special topic not otherwise offered in the English curriculum. Topics and instructors vary from semester to semester.

ENGL 4400/6400. Restoration and Eighteenth-Century English Drama. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Outstanding dramatists of the period: Dryden, Wycherley, Addison, Goldsmith, Sheridan, and others.

ENGL 4420/6420. Early Eighteenth-Century Prose and Poetry. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Poetry and prose of the earlier eighteenth century, emphasizing Addison, Steele, Defoe, Swift, and Pope.

ENGL 4430. The Eighteenth-Century English Novel. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The English novel from Defoe to 1800, including novels by Richardson, Fielding, Smollett, and Sterne, the Gothic novel, and the novel of purpose.

ENGL 4440/6440. The Age of Johnson. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
English literature of the late eighteenth century, emphasizing Johnson, Boswell, and their group.

ENGL 4490. Topics in Eighteenth-Century Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
A special topic not otherwise offered in the English curriculum. Topics and instructors vary from semester to semester.

ENGL 4500. Romantic Literature. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
British literature, 1785-1832. An introduction to genres, themes, and contexts of the Romantic period. Authors studied may include Blake, Wordsworth, Coleridge, Byron, Keats, Mary and Percy Shelley.

ENGL 4520. The Nineteenth-Century British Novel. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The development of the British novel in the nineteenth century.

ENGL 4530. Victorian Literature. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).

British literature from the first Reform Bill (1832) to the death of Queen Victoria (1901), with emphasis on the poetry and non-fiction prose of writers such as Tennyson, Elizabeth and Robert Browning, Arnold, Carlyle, Mill, Ruskin, and Christina and Dante Gabriel Rossetti.

ENGL 4590. Topics in Nineteenth-Century British Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
A special topic not otherwise offered in the English curriculum. Topics and instructors vary from semester to semester.

ENGL(AFAM) 4620. African American Poetry. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
African American poetry from the colonial period to the present, including slave and folk songs of the mid-nineteenth century, the Harlem Renaissance of the 1920's, and contemporary poetry. Emphasis on such figures as Langston Hughes, Margaret Walker, Gwendolyn Brooks, Sonia Sanchez, Amiri Baraka, Yusef Komunyakaa, Rita Dove, Kevin Young, and others.

ENGL(AFAM) 4630. African American Fiction. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Important African American stories and novels from the nineteenth and twentieth centuries, including works by such authors as Frances Harper, Jean Toomer, Ralph Ellison, James Baldwin, Alice Walker, and Toni Morrison.

ENGL 4640. Film as Literature. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The interpretation of films, with emphasis on the relationships between motion pictures and British and American literature.

ENGL 4650. Modern Drama. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The drama of Europe and America from the realism of Ibsen and Strindberg to the present.

ENGL 4660. Twentieth-Century British Poetry. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
British poetry since the 1890's.

ENGL 4670. The Twentieth-Century British Novel. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Fiction of such representative British novelists of the twentieth century as Bowen, Conrad, Forster, Joyce, Lawrence, Waugh, Woolf, and Greene.

ENGL 4680. Modern Irish Literature. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Fiction, poetry, and drama of the Irish Renaissance and after.

ENGL 4690. Topics in Twentieth-Century British Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
A special topic not otherwise offered in the English curriculum. Topics and instructors vary from semester to semester.

ENGL 4700. People of Paradox: American Colonial Voices. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The literary engagement with cultural pluralism in Colonial America. Writers may include Bradford, Mather, Bradstreet, Taylor, Cooke, Rowlandson, Byrd, Jefferson, Franklin, Brown, and Irving.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 4710. Emancipated Imagination: American Renaissance. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
American poetry, fiction, and prose written between 1820 and 1865. Writers may include Cooper, Poe, Caroline Kirkland, Emerson, Thoreau, Hawthorne, Stowe, Harriet Jacobs, Douglass, Melville, Whitman, and Dickinson.

ENGL 4720. American Realism and Naturalism. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2210 or CMLT 2220).
Regionalism, realism, and naturalism from 1865 to 1918 with attention to the themes of ethical conflict, determinism, urbanization, the New Woman, and the contributions of ethnic minorities. Writers may include Twain, James, Wharton, Jewett, Dunbar-Nelson, Zitkala-Sa, Chopin, Chesnutt, Crane, Howells, Dreiser, and Sui Sin Far.

ENGL 4730. The American Novel to 1900. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The growth of the novel in America from its inception in the Romantic to the development of the Realistic novel. Writers may include Cooper, Hawthorne, Melville, Twain, Simms, James, Howells, Stowe, Chesnutt, Dreiser, Norris, and Crane.

ENGL 4740. Southern Literature. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The literature of the South from its roots through the modern renaissance. Writers may include Byrd, Cooke, Longstreet, Simms, Poe, Timrod, Lanier, Chopin, Twain, the Agrarians, Toomer, Roberts, Faulkner, Hurston, Welty, Porter, O'Connor, Wolfe, Percy, Crews, Berry, Kenan, Tyler, Dickey, Chappell, Alice Walker, and McCarthy.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGL 4750. American Modernism. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The fiction, poetry, drama, and non-fiction prose that expresses the literary experimentation and social transformations of the period from 1918 to 1960. Writers may include Eliot, Pound, Stein, Fitzgerald, Hemingway, Faulkner, Toomer, Miller, O'Neill, Williams, Larsen, Steinbeck, Salinger, and O'Connor.

ENGL 4760. Contemporary American Literature. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Various aspects of American fiction, poetry, drama, or non-fiction prose since 1960. The emphasis will vary from semester to semester following new developments in literature.

ENGL 4770. Twentieth-Century American Poetry. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Ideas and forms in American poetry in the twentieth century. Writers may include Eliot, Pound, H.D., Stein, Stevens, Rich, Sexton, Roethke, Harjo, Lorde, Perlman, Howe, Ashbery, Lowell, Moore, Williams, and Frost.

ENGL 4780. Twentieth-Century American Novel. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The development of the American novel from Naturalism through Modernism and Post-Modernism. Writers may include Cather, Hemingway, Fitzgerald, Wright, Steinbeck, Faulkner, Porter, O'Connor, Ellison, Heller, Morrison, and Percy.

ENGL 4790. Topics in American Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
A special topic not otherwise offered in the English curriculum. Topics and instructors vary from semester to semester.

ENGL 4800. Advanced Creative Writing. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ENGL 3800 and permission of department.
Advanced instruction in writing. Focus, which will vary with professor and semester, may be fiction, poetry, fiction and non-fiction, or all genres.

ENGL 4820. Literary Theory. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Representative texts from Aristotle to Derrida and beyond, exemplifying a range of contemporary critical approaches and providing a historical context for current theoretical debates.

ENGL 4830. Advanced Studies in Writing. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: ENGL 3590 or ENGL 3600 or permission of department.
Advanced study of writing as process and product, focusing on particular discourse situations or kinds of texts. Topics might typically be advanced technical communication, academic writing for literary scholars, or text and hypertext.

ENGL 4850. Rhetoric, Literature, and Textuality. 3 hours.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
The relationship between rhetoric and the practice of writing, both literary and non-literary; from classical to contemporary theories of rhetoric (especially the role of writing in each theory) and the practical analysis of texts.

ENGL 4860. Multicultural Topics in American Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Topics in multicultural studies, with primary focus on literature by members of one or more traditionally marginalized cultural groups within the United States and with attention to historical context and theoretical aspects.

ENGL 4870. Folklore Studies. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2210 or CMLT 2220).
One or more folk groups, folklore genres, or topics concerning folklore.

ENGL(AFAM) 4880. Topics in African American Literature. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
Selected topics in African American literature such as African American autobiography, Harlem Renaissance, Gwendolyn Brooks and Richard Wright, and Black American literature and aesthetics.

ENGL 4888. Literary Computing. 3 hours.
Prerequisite: Permission of department.
An introductory survey of the history, tools, techniques, andtheoretical concerns of computer-enabled literary research,analysis, and communication.

ENGL 4890. Topics in Criticism and Culture. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400) and (ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220).
A special topic not otherwise offered in the English curriculum. Topics and instructors vary from semester to semester.

ENGL 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

ENGL 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project leader.
Non-traditional format: Directed study.

ENGL 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

ENGL 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field or in a closely related field.
Non-traditional format: Students will meet with faculty members on a regular basis.

(ENGR) Engineering

College of Agricultural and Environmental Sciences, Department of Biological and Agricultural Engineering

ENGR 1020. Surveying. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: MATH 1113.
Surveying methods, instruments, and computations related to field problems in distance measuring, leveling, directions, curves, and land surveying. Topographic mapping techniques will be emphasized. Not for credit toward an engineering major.

ENGR 1120. Engineering Graphics. 2 hours. 4 hours lab per week.
Prerequisite or corequisite: MATH 2200.
Standards and techniques for engineering drawings. Orthographic and isometric drawings through descriptive geometry. Computer graphics using AutoCAD software.

ENGR 1140. Computational Engineering Methods. 2 hours.
Prerequisite or corequisite: MATH 2200.
Computer programming and matrix techniques used in the analysis of engineering problems

ENGR 1920. Introduction to Engineering. 1 hour. 2 hours lab per week.
Prerequisite or corequisite: MATH 2200.
Engineering design will be reviewed and practiced through the use of a term project. The engineering discipline will be introduced through speakers and case studies.

ENGR 2080. Aviation Meteorology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: GEOG 1112 and (MATH 1113 or MATH 2200).
Meteorology from the unique perspective of the aviation industry. Review of meteorology and aerodynamics fundamentals. In-depth examination of aviation hazards such as turbulence, icing, and wind shear. Case studies of weather-related airline disasters. Use of aviation weather resources in the creation of weather briefings.

ENGR 2110. Engineering Decision Making. 3 hours.
Prerequisite: MATH 2200.
Economics, finance, and computer modelling are applied to engineering decisions

ENGR 2120. Engineering Statics. 3 hours.
Prerequisite: PHYS 1211-1211L and MATH 2200 and MATH 2210.
Prerequisite or corequisite: MATH 2500 and ENGR 1120 and ENGR 1140.
Two and three dimensional force systems, equilibrium, rigid structures, centroids, friction, and area moments of inertia.

ENGR 2130. Dynamics. 3 hours.
Prerequisite: ENGR 2120.
Particles and rigid bodies that are moving with respect to a reference system. Kinematics deals with motion in terms of displacement, velocity, and acceleration. Kinetics includes the effect of forces on particles and bodies.

ENGR 2140. Strength of Materials. 3 hours.
Prerequisite: ENGR 2120.
Elements of stress analysis, resistance, and design as applied to engineering materials and structures.

ENGR 2170. Electrical Circuits. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: PHYS 1212-1212L.
Prerequisite or corequisite: MATH 2700.
Circuit element, circuit models, and techniques for circuit analysis. The course emphasizes the application of Kirchhoff's laws in determining the transient and steady state response of circuits.

ENGR 2500. Introduction to Biological Engineering. 3 hours.
Prerequisite: BIOL 1108-1108L and PHYS 1212-1212L.
Prerequisite or corequisite: CHEM 2100 and CHEM 2100L and MATH 2700.
Biological and engineering principles are utilized to produce practical products, processes, or systems that serve the needs of society.

ENGR 2920. Engineering Design Methodology. 2 hours.
Prerequisite: PHYS 1211-1211L and MATH 2500 and ENGR 1920.
Prerequisite or corequisite: ENGR 2120.
Design methodology will be taught and practiced through use of term projects. Students will learn QFD for problem definition, conceptual design techniques and analysis procedures for detailed design.

ENGR 3050. Soil and Water Resource Conservation. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: [MATH 1113 and PHYS 1111-1111L and CHEM 1212 and CHEM 1212L and (CRSS 3050-3050L or CRSS(FORS) 3060-3060L)] or permission of department.
The science of hydrology and presentation of methods for management of runoff, erosion, and

associated water quality issues. Not for credit toward an engineering major.

ENGR 3070. Turf and Landscape Irrigation System. 2 hours.
Prerequisite: (BIOL 1107-1107L or BTNY 1210 and BTNY 1210L) and MATH 1113.
Engineering technology involved in component selection, installation, and operation of turfgrass and landscape irrigation systems. Not for credit toward an engineering major.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

ENGR 3120. Spatial Data Analysis. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: MATH 2200 and ENGR 1120.
Methods, instrumentation, and computations related to line-of-sight spatial data collection and analysis. Topics include leveling, distance measurements, direction determination, and topographical surveying. Additional emphasis on large scale, web-based data collection and analysis using Geographic Information Systems.

ENGR 3140. Thermodynamics. 2 hours.
Prerequisite: MATH 2210 and PHYS 1211-1211L.
The science of energy analysis from an engineering perspective. Focus on forms of energy, transformations of energy, and energy flows. Study applications in biological and traditional engineering systems.

ENGR 3150. Heat Transfer. 3 hours.
Prerequisite: MATH 2700.
Theory of heat transmission by conduction, convection, and radiation. The solution of steady and unsteady state engineering problems involving heat transfer.

ENGR 3160. Fluid Mechanics. 3 hours. 2 hours lecture and 2 hours lab per week.
Not open to students with credit in ENGR 2150.
Prerequisite: ENGR 2120.
Prerequisite or corequisite: MATH 2700.
Elements and engineering applications of the laws of fluid behavior to evaluate the forces and energies generated by fluids at rest and in motion.

ENGR 3210. Electrical Machines and Power Distribution. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 2170.
DC and AC motors and generators. The design and analysis of electrical power distribution systems.

ENGR 3270. Electronics I. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 2170.
Diodes, transistors, and operational amplifiers.

ENGR 3300. Mechanism Design I. 3 hours.
Prerequisite: ENGR 2130 and ENGR 2140.
Basic mechanical parts, kinematic analysis of mechanisms, application of static and fatigue failure theories, dimensioning and tolerancing, material selection, basic manufacturing processes.

ENGR 3410. Introduction to Natural Resource Engineering. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 3160 or permission of department.
Engineering hydrology, soil erosion, channel design, flow measurement techniques, engineered containment structures, water distribution and nonpoint water quality.

ENGR 3420. Introduction to Soil Mechanics. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 2120.
Topics including soil shear strength, shallow foundations, slope stability, lateral earth pressure and soil compaction, design of shallow foundations for agricultural structure, retaining walls, and engineered slopes will be discussed.

ENGR 3440. Water Management. 3 hours.
Prerequisite: ENGR 3410.
Science and design methods associated with managing water on a field scale. Topics will include the management of excess and deficient surface and ground water conditions that may impact activities such as agricultural production, construction, bioremediation, and environmental restoration.

ENGR 3520. Mass Transport and Rate Phenomena. 3 hours.
Prerequisite: ENGR 2500 and ENGR 3160 and MATH 2700.
Mass transport and rate phenomena in the analysis of engineering problems in biological systems.

ENGR 3540. Physical Unit Operations. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 3160 and ENGR 3150.
Physical unit operations for processing plants. Systems for handling liquids or gases include pump or fan driven systems. Physical separation of solids in liquid or gas medium. Psychometrics for process environment control. Water or solvent transport from materials.

ENGR 3610. Structural Design. 3 hours.
Prerequisite: ENGR 2140.
Deals with the relationships between loads and deflections which occur in structures as well as designing with wood and concrete.

ENGR 3720. Engineering Physiology. 3 hours.
Prerequisite: ENGR 3160.
Prerequisite or corequisite: ENGR 3520.
Topics will be discussed which identify physical

features and engineering principles governing the behavior of organisms.

ENGR 3900. Cooperative Work Experience. 1 hour. Repeatable for maximum 8 hours credit.
Coordinated and planned work experience with cooperating industries or agencies.
Non-traditional format: Student will be away from campus in a cooperative work experience with an approved employer.

ENGR(GEOG) 4111/6111-4111L/6111L. Atmospheric Thermodynamics. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: MATH 2500 and PHYS 1212-1212L.
Prerequisite or corequisite: MATH 2700 and (CHEM 1211 or CHEM 1311H or CHEM 1411) and (CSCI 1301-1301L or ENGR 1140).
An introduction to atmospheric thermodynamics with emphasis on the first and second laws of thermodynamics, equation of state for gases, moisture variables, adiabatic and diabatic processes of dry and moist air, phase changes of water, and atmospheric statics.

(ENGR)GEOG 4112/6112. Atmospheric Dynamics. 3 hours.
Prerequisite: (GEOG 1112 and GEOG 1112L and MATH 2200) or permission of department.
A quantitative investigation of large-scale atmospheric motion. Equations of motion are derived from basic physical laws. Concepts of vorticity, quasi-geostrophic theory, and general circulation are addressed.

ENGR 4131/6131-4131L/6131L. Introductory Atmospheric Physics. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: MATH 2500 and PHYS 1212-1212L.
Prerequisite or corequisite: MATH 2700 and (CHEM 1211 or CHEM 1311H or CHEM 1411) and (CSCI 1301-1301L or ENGR 1140).
An introduction to the physics of the atmosphere with emphasis on the laws of radiation, solar and terrestrial radiation, surface and atmospheric energy balances, cloud physics, precipitation formation, and atmospheric optical and electrical phenomena.

ENGR(GEOG) 4161/6161-4161L/6161L. Environmental Microclimatology. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: MATH 2200 and (PHYS 1111-1111L or PHYS 1211-1211L) and [(BIOL 1103 and BIOL 1103L) or (BIOL 1104 and BIOL 1104L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L) or (BTNY 1220 and BTNY 1220L)].
An introduction to the interactions between the biosphere and atmosphere. Energy, moisture, and carbon exchange in the soil-plant-atmosphere continuum with applications to managed and natural environments. The impact of weather and climate on humans and domesticated animals.

ENGR(MARS) 4175/6175. Coastal Meteorology. 3 hours.
Prerequisite: MATH 2500 and PHYS 1212-1212L and (MARS 1010-1010L or GEOG 1112).
Prerequisite or corequisite: MATH 2700.
An introduction to air-sea-land interactions that occur at the boundaries of continents. The course will cover atmospheric radiation, thermodynamics, and hydrodynamics, mesoscale and synoptic scale weather systems, atmospheric boundary layers, and applications to engineering meteorology.

ENGR(GEOG) 4180/6180. Special Topics in Atmospheric Sciences. 3 hours.
Prerequisite: Permission of department.
Special interest topics in atmospheric sciences.

ENGR 4210/6210. Linear Systems. 3 hours.
Prerequisite: ENGR 2170.
Time and frequency domain analysis of linear systems, convolution, fourier series, and fourier transforms with applications.

ENGR 4220/6220. Feedback Control Systems. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 4210/6210.
The analysis and design of continuous and discrete time, and linear feedback control systems.

ENGR 4230/6230. Sensors and Transducers. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 2170.
Fundamentals of the sensing process, transducers and their environments and the measurement problem. Transducer types and modeling. Displacement, motion, pressure, fluid-flow, temperature measurements.

ENGR 4240. Introduction to Microcontrollers. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 2170 and ENGR 4230/6230.
Microcontrollers in engineering monitoring and control applications. The MC68HCII is used to demonstrate 1) the use of the MC as an integral part of modern electronic and electromechanical systems 2) design techniques for interfacing MC's to digital input/output devices and analog transducers 3) development tools 4) real-time control.

ENGR 4250/6250. Advanced Microcontrollers. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 4240.
Prerequisite or corequisite: ENGR 3270.
Using the MC68HCII to solve practical engineering monitoring and control problems. A project-oriented course.

ENGR 4270. Electronics II. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 3270.
Linear large-scale integrated circuits, power components, active filters and communication circuits.

ENGR 4280/6280. Measurement Automation and Control. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 1140 and ENGR 2170.
The analysis, design, and programming of systems used for automatic data acquisition, measurement, and control.

ENGR 4300. Mechanism Design II. 3 hours.
Prerequisite: ENGR 3300.
Design and selection of machine elements and components.

ENGR 4330. Plastics and Composites. 3 hours.
Prerequisite: ENGR 2140.
Material properties of plastic and composite materials and the design of these type members for structural and mechanical uses.

ENGR 4340. Machine Hydraulics. 3 hours.
Prerequisite: ENGR 3160.
Fundamental understanding of power hydraulic components and hydraulic system design.

ENGR 4350/6350. Introduction to Finite Element Analysis. 3 hours.
Prerequisite: ENGR 2140 and MATH 2700.
Fundamental finite element theory for the solution of engineering problems. Geometrical modelling techniques, element selection, and tests for accuracy. Emphasis on problems in structural mechanics and elasticity.

ENGR 4360/6360. Advanced Topics in CAD/CAM. 3 hours.
Prerequisite: ENGR 3300.
The use of computer aided design/computer aided manufacturing. Computer modeling of solid objects, advanced mechanism modelling, rapid prototyping and virtual reality.

ENGR 4370/6370. Material Science and Experimental Stress Analysis. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 3300.
Properties and selection of engineering materials. Structure of solids and the effects of solidification, forming and heat treating operations on material properties. Measurement of stresses in materials using strain gage and photoelastic technology.

ENGR 4420/6420. Industrial Ventilation Design and Control. 3 hours.
Prerequisite: ENGR 3150 and ENGR 3160.
Engineering design of industrial ventilation systems including selection of fans, ductwork, diffusers, hoods, air cleaners, and humidifiers.

ENGR 4440/6440. Environmental Engineering I. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 3410 and ENGR 3440.
Engineering science and design related to treatment of drinking water and wastewater as well as the treatment and ultimate disposal of the sludges created during water treatment.

ENGR 4450/6450. Environmental Engineering II. 3 hours.
Prerequisite: ENGR 3520 and ENGR 4480/6480.
Engineering science and design related to environmental modeling, solid waste management, and hazardous waste management. Concepts of risk assessment will also be introduced.

ENGR 4460. Design of Natural Wastewater Treatment Systems. 3 hours.
Prerequisite: ENGR 3440.
Prerequisite or corequisite: ENGR 4440/6440.
The engineering design of natural wastewater treatment systems. Pond, aquaculture, constructed wetlands, land application, and small on-site treatment systems will be covered. Natural methods for sludge handling and processing will also be discussed.

ENGR 4480/6480. Instrumentation for Environmental Quality. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: MATH 2700 and PHYS 1212-1212L.
Operation of instrumentation used to measure physical variables which determine environmental quality. The engineering design and application of measuring systems for airborne particulates, gaseous atmospheric contaminants, solar and environmental radiation, and noise will be emphasized.

ENGR 4510/6510. Engineering and Design of Biological Process I. 3 hours.
Prerequisite: ENGR 3520 and BCMB 4010/6010 and MIBO 3500.
Design and analysis of enzymatic and microbial biological reaction systems.

ENGR 4520/6520. Engineering and Design of Biological Processes II. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: ENGR 4510/6510.
Unit operations used for biological processing including filtration, centrifugation, cell disruption, isolation, purification, and polishing.

ENGR 4530/6530. Monitoring and Control of Biological Processes. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: ENGR 4510/6510.
Concepts of biological process controls; modern control techniques and optimization of batch, fed-batch and continuous bioreactors, and other biological systems.

ENGR 4540/6540. Applied Machine Vision. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Automated vision systems to identification, measurement and quality control. Electromagnetic spectrum, illumination design, imaging sensor election, vision system calibration. Implementation of image processing algorithms for object recognition and classification.

ENGR 4550/6550. Processing Plant Design. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 3540.
Design of systems for processing, primarily based upon unit operations processes. Process simulation or modelling for optimization purposes will be applied to processing systems. Plant layout required for processing will be included.

ENGR 4610. Design of Light Steel Structures. 3 hours.
Prerequisite: ENGR 3610.
Design of light frame steel structures. Theory and behavior of these type members under load and their connections.

ENGR 4620. Management of Structural Environments. 3 hours.
Prerequisite: ENGR 3150.
Environmental factors affecting animal and plant production; heat and vapor flow in buildings; design of ventilation systems.

ENGR 4630. Engineering Design of Residential Structures. 3 hours.
Prerequisite: ENGR 2110 and ENGR 2140 and ENGR 2170 and ENGR 3150 and ENGR 3160.
Design of foundations, structural members; heating and cooling systems; water supply and distribution; waste removal; electrical systems; and lighting. Selection of thermal insulation, vapor barriers, windows and doors, and HVAC equipment determined by engineering principles.

ENGR 4740/6740. Biomaterials. 3 hours.
Prerequisite: BIOL 1108-1108L and ENGR 2140.
Biomaterials and groundwork for topics such as mechanical, chemical, and thermal properties of replacement materials and tissues. Implantation of materials in the body is studied for the biological point of view.

ENGR 4760/6760. Biomechanics. 3 hours.
Prerequisite: BIOL 1108-1108L and ENGR 2130 and ENGR 2140.
The application of engineering principles to body dynamics is discussed. The student should understand the mechanics of the musculoskeletal system. A term design project is required.

ENGR 4920. Engineering Design Project. 4 hours.
Prerequisite: ENGR 2920 and permission of department.
Engineering design experience including completion of a design project under the supervision of a project director.
Non-traditional format: Students will meet with a faculty review panel every two weeks. The faculty will evaluate progress and feasibility of the work.

ENGR(PHYS) 4921. Engineering Physics Design Project. 3 hours.
Prerequisite or corequisite: PHYS 3330-3330L and PHYS 4201/6201 and (ENGR 2130 or PHYS 4101/6101) and (ENGR 3300 or ENGR 4240).
Engineering design experience including completion of a design project under the supervision of a project director.
Non-traditional format: Students will meet with a faculty review panel every two weeks. The faculty will evaluate progress and feasibility of the work.

ENGR (CSCI) 4922. Computer Systems Engineering Design Project. 3 hours.
Prerequisite or corequisite: CSCI 4720 and ENGR 4250/6250.
Engineering design experience, including completion of a design project under the supervision of a project director.

ENGR 4940. Introductory Systems Modeling. 3 hours.
Prerequisite: ENGR 1140 and ENGR 2110 and MATH 2700.
Computer modeling of biological and agricultural processes and the solution of engineering/management problems in agro-industrial systems through computer simulation. Four methodologies will be presented: statistical data fitting, system dynamics, bond graph, and discrete event modeling.

ENGR 4980. Special Topics in Engineering. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Special problems in engineering design, analysis, or synthesis.

ENGR 5930/7930. GPS with Engineering and GIS Applications. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: ENGR 1120 or GEOG 4370/6370-4370L/6370L.
The Global Positioning System, Differential GPS, and Real Time Kinematic GPS. Applications of GPS to engineering and geographic information systems.

(ENTO) Entomology

College of Agricultural and Environmental Sciences, Department of Entomology

ENTO(BIOL) 2010. Insects and the Environment. 3 hours.
Designed to acquaint students with our dependence on and interaction with insects in today's world.

ENTO 3140-3140L. Insect Natural History. 4 hours. 2 hours lecture and 6 hours lab per week.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L.
Insect biology, with emphasis on factors that have made insects one of the most abundant and successful animal groups. Topics include the behavior, ecology, and evolution of the major insect groups. Most laboratory periods will be spent in the field.

(ENTO)CRSS(PATH) 3500. Turfgrass Pest Management. 3 hours.
Prerequisite: CRSS 2830 or CRSS 3270-3270L.
Identification and control of turfgrass weeds, insects, and diseases. Emphasis will be placed on management strategies that include both chemical and non-chemical approaches to the prevention and control of common turfgrass pests.

ENTO(BIOL)(ECOL)(EHSC)(LAND) 3590-3590L. Urban Entomology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: (BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L or permission of department.
Urban entomology, including identification, biology, and control of insects and selected arthropod pests with emphasis on the efficacy and environmental impact of pest control tactics in the urban habitat.

ENTO 3650-3650L. Medical Entomology. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L.
Arthropods of medical and veterinary importance, and the diseases they transmit.

ENTO 3740-3740L. Insect Pest Management. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: (BTNY 1220 and BTNY 1220L) or (BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L.
An introduction to entomological science as a foundation for recognition and management of insect pests in agriculture, landscape, and urban environments. Emphasis is on concepts of integrated pest management using a combination of cultural, biological, and chemical control strategies.

ENTO 3820-3820L. Forest Protection Entomology. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L.
Major groups of insects and related arthropods. Identification, biology, and management techniques for major forest insects in North America.

ENTO 3900. Special Problems in Entomology. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
A course designed to permit interested and well-prepared undergraduate students to pursue an entomology problem approved by the staff member under whom the work will be done.
Non-traditional format: Course requirements are individually negotiated between the student and instructor.

ENTO 4000/6000-4000L/6000L. General Entomology. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: BIOL 1107-1107L and BIOL 1108-1108L.
Functional anatomy and physiology, behavior, ecology, insects as vectors of pathogens, chemical and biological control of pests. Laboratory sessions are devoted primarily to collecting and the identification of major families of insects.

ENTO 4010/6010-4010L/6010L. Insect Taxonomy. 5 hours. 3 hours lecture and 6 hours lab per week.
Prerequisite: ENTO 4000/6000-4000L/6000L or permission of department.
Insect identification, classification, and phylogeny; collection and preparation techniques for insect specimens; introduction to theoretical and practical aspects of systematics.

(ENTO)BCMB 4200/6200. Biotechnology. 3 hours.
Not open to students with credit in BCMB 4130/6130.
Prerequisite: BCMB(BIOL)(CHEM) 3100 and GENE(BIOL) 3200.
Prerequisite or corequisite: MIBO 3500 or CBIO(BIOL) 3400.
Applied aspects of biochemistry and molecular biology in various fields, with emphasis on the use of recombinant DNA methods and protein engineering.

ENTO(CRSS) 4250/6250-4250L/6250L. Pesticide Management and Utilization. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: CHEM 1212 and CHEM 1212L.
Practical management and utilization of pesticides in urban and agricultural environments. Subject areas include classification of insecticides, herbicides, and fungicides, etc., their general chemical

and toxicological properties, deployment philosophy, hazards and environmental impact, formulation and application, safety and disposal, and management of pesticide resistance.

(ENTO)ANTH(BIOL)(BTNY)(ECOL) 4260/6260-4260L/6260L. Natural History Collections Management. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
Theories, policies, and operational procedures in the management of natural history collections, including higher category classification, identification, field collecting, accessioning, preparation, curation, and data management.

(ENTO) (ANTH) (BIOL) (BTNY) ECOL (FORS) (GEOG) (GEOL) (PATH) 4261. Museum of Natural History Internship. 3 hours. Repeatable for maximum 6 hours credit. 7 hours lab per week.
Prerequisite: Permission of instructor and permission of Museum of Natural History.
Supervised work experience with a natural history collection. Students will learn techniques and other procedures for curating materials in a collection of their choice under the direction of collection personnel.
Non-traditional format: Students will maintain regular, weekly work schedules totaling 7 hours per week under the supervision of faculty and other collection personnel associated with the Museum of Natural History.

ENTO 4300/6300-4300L/6300L. Bee Biology, Culture, and Management. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: [(BIOL 1104 and BIOL 1104L or BIOL 1108-1108L) and ENTO 4000/6000-4000L/6000L] or permission of department.
The life history, ecology, behavior, and pollinating activities of honey bees and other bees of the Southeast, including theory and practice of bee culture.

ENTO 4400/6400-4400L/6400L. Insect Behavior. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: ENTO 4000/6000-4000L/6000L.
Principles of behavior; communication, sexual behavior, anti-predator adaptations, insect-plant interactions, and insect sociality.

ENTO(CRSS)(PATH) 4740/6740-4740L/6740L. Integrated Pest Management. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ENTO 3740-3740L or PATH 3530-3530L or CRSS 4340/6340.
The utilization and integration of pest control tactics (cultural methods, biological control, pesticides, host resistance) for management of insects, pathogens, and weeds. The major methodologies for controlling pests are discussed individually and within the context of profitable production of selected commodities followed by discussion of multiple pest management using integrated control techniques.

ENTO 4820/6820-4820L/6820L. Entomology in Natural Resources Management. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or permission of department.
Arthropods important in management of forest resources including timber, wildlife, and recreation.

ENTO 4960. Undergraduate Research in Entomology. 4 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Directed research on insects in the laboratory or field.
Non-traditional format: Students will conduct original supervised research requiring at least twelve hours in the laboratory per week.

ENTO 4960H. Directed Reading and/or Projects (Honors). 4 hours.
Prerequisite: Permission of Honors.
This course affords Honor students of senior standing the opportunity to engage in individual directed study.
Non-traditional format: Directed research on insects in the laboratory or field.

ENTO 4970H. Directed Reading and/or Projects (Honors). 4 hours.
Prerequisite: Permission of Honors.
This course affords Honor students of senior division standing the opportunity to engage in individual directed study.
Non-traditional format: Directed research on insects in the laboratory or field.

ENTO 4990H. Honors Thesis. 4 hours.
Prerequisite: Permission of Honors.
Individual research in the field of his/her major or in a closely related field.
Non-traditional format: Directed research leading to an honors thesis.

ENTO 5730/7730-5730L/7730L. Entomology for Teachers. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
Insects and related forms, their identification, and life habits, with emphasis on their use in pre-college life science curricula.

(EOCS) Occupational Studies

College of Education, Department of Occupational Studies

EOCS 2450. Practicum in Occupational Studies I. 1-3 hours. Repeatable for maximum 3 hours credit.
Initial supervised field experience related to teaching individuals in programs of occupational education.
Non-traditional format: Supervised experience in school or occupational setting.

EOCS 3010. Introduction to Occupational Studies. 3 hours.
Teaching in an occupational studies discipline with emphasis on programs which prepare individuals for the workforce.

EOCS 3450. Practicum in Occupational Studies II. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: EOCS 2450.
Supervised field experience related to teaching individuals in programs of occupational education.
Non-traditional format: Observation and participation experience in a school setting.

EOCS 4000/6000. Directed Readings in Occupational Studies. 1-3 hours. Repeatable for maximum 6 hours credit.
Individual research in an occupational studies discipline under the direction of a faculty member.
Non-traditional format: Independent study completed under supervision of a faculty member.

EOCS 4010. Student Assessment in Programs of Occupational Studies. 2 hours.
Planning and implementing traditional and authentic assessment strategies, methods, and techniques to assess student learning and development in programs of occupational studies.

EOCS 4100/6100. Principles and Practices of Career Education. 3 hours.
Career education in elementary, middle, and secondary schools; major theories of career development; use of standardized assessment, career information resources, and curriculum materials; special issues and trends influencing work and careers.

EOCS 4350/6350. Curriculum Planning in Occupational Studies. 3 hours.
Content identification, program organization, preparation of instructional objectives, and guidelines for selection and development of instructional materials for occupational studies programs.

EOCS 4360/6360. Instructional Strategies in Occupational Studies. 3 hours.
Teaching materials, methods, techniques, and strategies utilized in programs of occupational studies.

EOCS 4450. Professional Development in Occupational Studies. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: EOCS 2450.
Various roles of occupational education teachers with emphasis on preparing to enter the teaching profession.

EOCS 4990/6990. Topics in Occupational Studies. 1-3 hours. Repeatable for maximum 6 hours credit.
Contemporary issues in occupational studies with emphasis on the effect of these issues on education and the workplace.

EOCS 5030/7030. Organizing and Coordinating Work and Community-Based Education Programs. 3 hours.
Planning, implementing, and directing various school-to-career transition models in education.

EOCS 5050/7050. Problems of Teaching Occupational Studies. 3 hours.
Prerequisite: Permission of department.
Selection, utilization, and evaluation of strategies that support effective teaching in occupational studies.

EOCS 5060/7060. Student Organizations in Occupational Studies. 2 hours.
Student organizations in occupational studies programs, emphasizing contributions of organizations to the curricula. Planning, directing, and evaluating activities such as group and individual projects. Techniques of leadership and group development are included.

EOCS 5120/7120. Needs Analysis in Occupational Studies. 3 hours.
Techniques in analyzing occupations, industry, human resources, and communities to determine instructional and training content.

EOCS 5450/7450. Internship in Business and Industry. 1-3 hours. Repeatable for maximum 6 hours credit.
Guided learning experiences in a business or industry for the purpose of updating a student's knowledge or skills in an occupational area.
Non-traditional format: Supervised experience in an occupational setting.

EOCS 5460. Student Teaching in Occupational Studies. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.

Full-time supervised student teaching experience in an existing occupational studies program.
Non-traditional format: Supervised full-time experience in school setting.

EOCS 5550/7550. Students With Special Needs in Programs of Occupational Studies. 3 hours.
Learning characteristics of students with special needs, including those who are disabled, economically and academically disadvantaged. Implications for occupational studies are considered and modifications of curriculum and instruction are identified.

(EPSY) Educational Psychology

College of Education, Department of Educational Psychology

EPSY 2020. Learning and Development in Education. 3 hours.
Not open to students with credit in EPSY 2020H.
Major theories, ideas, and research findings about learning, and child and adolescent development, including development of motivation, with special emphasis on practical implications for school teaching and learning.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

EPSY 2020H. Learning and Development in Education (Honors). 3 hours.
Not open to students with credit in EPSY 2020.
Prerequisite: Permission of Honors.
Learning and developmental processes and their application to educational settings. Special emphasis is placed on cognitive theory as it relates to school learning and experimental methods for conducting studies of the learner.

EPSY 2450. Practicum in Contextual Teaching and Learning. 1 hour.
Corequisite: EPSY 2020.
This practicum provides a field experience for the Learning and Development in Education course.
Non-traditional format: This course will only be taken in conjunction with a special section of Learning and Development in Education. The lecture/discussion will take place during that course.

EPSY 3010. Child and Adolescent Development for Education. 3 hours.
Prerequisite: EPSY 2020.
Cognitive, sociocultural, emotional, and moral development from infancy to early adulthood, with particular emphasis placed on developmental issues relevant to education.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

EPSY 3010H. Child and Adolescent Development for Education (Honors). 3 hours.
Not open to students with credit in EPSY 3010.
Prerequisite: EPSY 2020 and permission of Honors.
Child and adolescent development is examined in-depth from an educational perspective. Cognitive, emotional, moral, and social aspects of development are emphasized.

EPSY(PSYC)(ARTI) 3020. Introduction to Cognitive Science. 3 hours.
Prerequisite: PSYC 1101 or PHIL 1000 or EPSY 2020.
Interdisciplinary study of mind and intelligent activity that forms cognitive sciences. Contributions of psychology, philosophy, linguistics, biology, anthropology, computer science, and education toward uncovering important aspects of the mind and intelligent activity are discussed.

EPSY 4000/6000. Independent Study in Educational Psychology. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Independent study agreed upon by the student and sponsoring professor.
Non-traditional format: Prior arrangement with professor is made for course work assignment and hours to be completed.

EPSY 4060. Psychological Interventions in the Schools. 3 hours.
The roles, functions, and practices of child psychologists in schools and other applied settings.

EPSY 4310/6310. Prevention and Remediation of Classroom Behavior Problems. 3 hours.
Prevention and management of classroom behavior problems using behavioral, humanistic, and motivational strategies. Focuses on prevention of problem behaviors through effective teaching and classroom design.

(ERSH) Educational Research and Measurement

College of Education

ERSH 4200/6200. Methods of Research in Education. 3 hours.
Diverse research approaches used in behavioral science settings, including critical review and interpretation of published research.

ERSH 4300/6300. Applied Statistical Methods in Education. 3 hours.
Prerequisite: ERSH 4200/6200.
Techniques for describing and summarizing data for educational research studies. Applications of the standard normal distribution and the use and interpretation of standard scores. Inferential statistics

for one and two population studies including means, proportions, and correlations.

ERSH 4600/6600. Applied Educational Assessment. 3 hours.
Development, administration, scoring, analysis, and interpretation of classroom educational assessments used in the service of instruction and accountability objectives. Traditional as well as current approaches (portfolios, performance assessments). Although classroom approaches are emphasized, standardized measures are also studied.

(ESCI) Science Education

College of Education, Department of Science Education

ESCI 3450. Practicum in Science Education. 1 hour.
Intensive school-based experiences in grades 7 through 12 requiring students to teach in varied cultural and regional settings.
Non-traditional format: One hour a week in a school based practicum.

ESCI 4000/6000. Special Problems in Science Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Specialized study appropriate to the needs of the individual.
Non-traditional format: Independent study.

ESCI 4030/6030. Teaching Science to Students with Special Educational Needs. 3 hours.
Basis and practice of modifying science programs/teaching for students with special educational needs and introductory skills for modifying science programs/teaching strategies.

ESCI 4420. Science for Early Childhood Education. 3 hours.
Prerequisite: Permission of department.
Science curriculum, instructional practices, and assessment techniques for young children. Content selection and organization, lesson and unit planning, teaching and assessment materials.

ESCI 4430. Science Curriculum for the Middle Grades. 3 hours.
Prerequisite: Permission of department.
Corequisite: GEOL 4750/6750.
Examination and selection of science curriculum materials and assessments. Evaluating and reformulating materials for relevance to middle grades classrooms. Special attention to examples and problems drawn from the life, earth, and environmental sciences.

ESCI 4440. Science Teaching Methods in the Middle Grades. 3 hours.
Prerequisite: Permission of department.
Corequisite: CHEM 1060-1060L.
Science teaching methods using classroom, laboratory, and field experiences. Development of a range of strategies appropriate for use with middle grades students. Special attention to examples and problems drawn from the physical sciences.

ESCI 4450/6450. Science Curriculum and Learning. 3 hours.
Prerequisite: EPSY 2020 and EFND 2030.
Science curriculum models for students in grades 7 through 12 in relation to goals for science education and classroom practice. Development, selection, and evaluation of curricular materials based on research in learning.

ESCI 4460/6460. Methods of Science Teaching. 3 hours.
Prerequisite: EPSY 2020 and EFND 2030.
Corequisite: ESCI 3450 and ESCI 4450/6450.
Science instructional strategies and classroom assessment for students in grades 7 through 12. Classroom management, lesson planning, and safety in the science classroom.

ESCI 4470/6470. Special Topics in Science Teaching. 3 hours.
Selected modules on science teaching and learning on special topics such as applications of life science teaching; applications of physical science teaching; interdisciplinary science teaching; multimedia and computers in science teaching; reading, writing, and literacy in science.

ESCI 4480/6480. Technological Capabilities for Science Teaching. 3 hours.
Classroom applications of electronic technologies to science teaching, including analog audiovisual media, microcomputers, telecommunications networks, and their interactions. Technology-facilitated teaching strategies and curriculum integration in science teaching at the middle and secondary school levels.

ESCI 5460/7460. Science Education Student Teaching. 9 hours.
Prerequisite: ESCI 3450 and ESCI 4450/6450 and ESCI 4460/6460.
Corequisite: ESCI 5470/7470 and ESCI 5480/7480.
School-based experiences in grades 7 through 12 under the supervision of a University supervisor.
Non-traditional format: Eleven weeks, full-time experience.

ESCI 5470/7470. Reflection on Science Teaching. 3 hours.
Prerequisite: ESCI 3450 and ESCI 4450/6450 and ESCI 4460/6460.

Corequisite: ESCI 5460/7460 and ESCI 5480/7480.
Topics following student teaching include development as a reflective practitioner, preparation for being a first year teacher, and professional portfolio development.

ESCI 5480/7480. Philosophy and Leadership in Science Classroom Practice. 3 hours.
Prerequisite: ESCI 3450 and ESCI 4450/6450 and ESCI 4460/6460.
Corequisite: ESCI 5460/7460 and ESCI 5470/7470.
Historical, cultural, social, political, and professional influences related to science classroom practice in grades 7 through 12.

(ESOC) Social Science Education

College of Education, Department of Social Science Education

ESOC 2380. Using Computers in Social Science Education. 1 hour. 2 hours lab per week.
Computer technology skills, including social science education applications.

ESOC 2450. Initial Field Experience in Social Science Education. 1 hour.
In-school observation of middle and secondary grades in social studies.
Non-traditional format: In-school observation of middle and secondary grades social studies supervised by faculty.

ESOC 3420. Early Childhood Social Studies. 3 hours.
Prerequisite: Permission of department.
Social studies curriculum and instruction for young children; content selection, lesson and unit planning, teaching methods, materials, and evaluation strategies.

ESOC 4000/6000. Special Problems in Social Science Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Intensive study of a problem in social science education through library research or collection and analysis of primary data.
Non-traditional format: Individual study supervised by a faculty member.

ESOC(HIST) 4150/6150. Teaching United States History. 3 hours.
Classic historiography and current debates among historians over major themes and events in United States history. Examination of ways in which this historical scholarship can be incorporated into social studies teaching. Evaluation of materials and methods used to teach United States history in secondary and middle schools.

ESOC 4350/6350. Social Science Curriculum in Secondary Schools. 3 hours.
Prerequisite: ESOC 2450 or permission of department.
Current status of and trends in the social science curriculum in secondary schools, with illustrations of selected curriculum models for both cognitive and affective learning.

ESOC 4360/6360. Methods of Teaching Social Science in Secondary Schools. 3 hours.
Prerequisite: Permission of department.
Instructional objectives and the examination and application of instructional procedures, utilization of media, and methods of evaluation.

ESOC 4400/6400. Teaching Social Studies in the Middle Grades. 3 hours.
Prerequisite: Permission of department.
Instructional procedures and materials focusing upon the cognitive and affective processes relevant to middle grades social studies education.

ESOC 4450. Senior Field Experience in Social Science Education. 1 hour. 2 hours lab per week.
Prerequisite: Permission of department.
Observation and practical experience in middle and secondary grades social studies.
Non-traditional format: Students will meet with faculty members on a regular basis.

ESOC 5010/7010. Teaching of Geography. 3 hours.
Prerequisite: Permission of department.
Geographic principles and the history of geography in the school curriculum; the literature of the field, including textbooks; the application of special techniques; and geographic evaluation.

ESOC 5200/7200. Economic Education in the Social Science Curriculum. 3 hours.
Instructional strategies and materials for teaching basic economic concepts in an integrated kindergarten through grade 12 social science curriculum, with emphasis on utilizing a decision-making model for analyzing contemporary economic problems.

ESOC 5460/7460. Student Teaching in Social Science Education. 1-15 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department.
Teaching social studies in the middle or secondary grades under supervision of school and university professional personnel.
Non-traditional format: In-school teaching experience in middle and secondary grades social studies supervised by faculty.

ESOC 5520/7520. Teaching Politics, Government, and Citizenship. 3 hours.
Prerequisite: Permission of department.
Rationale for and resources in political science and civic/citizenship education, the role of teachers and schools in political socialization, and teaching procedures for instruction on state and local citizenship in middle grades and high schools.

ESOC 5850/7850. Education, Citizenship, and Culture in the USA and England. 3-6 hours.
An examination of the K-12 education systems of the United States and England in comparative perspective. Particular attention to the issue of education for citizenship will be examined. In addition, the impact of national politics, culture, and society on public schooling will be explored.
Non-traditional format: Taught under the COE at Oxford program, the course will include multiple visits to schools in England and talks from English teachers and faculty from Oxford University. To obtain six hours credit the student will be required to complete a detailed and comprehensive study (approximately 7,500 words) of an aspect ofEnglish education. The specific focus of this study will be negotiated with the course instructor. Possible topics include: multicultural education; special needs and inclusion; assessment and testing, teacher education; a subject study (e.g., science,mathematics, history). The study should analyze national education mandates, school policies, classroom practice, and related literature. A section of the study should be devoted to a critical comparison of educational practice in the UK with that of the USA.

(ETES) Technological Studies

College of Education, Department of Occupational Studies

ETES 2010. Internship in Technological Studies. 1-3 hours. Repeatable for maximum 9 hours credit.
Supervised educational experiences to address specified goals and objectives for teaching technological studies.
Non-traditional format: Supervised experience in school or occupational setting.

ETES 3100. Technical Field Theory. 3-12 hours. Repeatable for maximum 12 hours credit.
Corequisite: ETES 3110.
Achievement in technical theory associated with occupational fields evaluated through National Occupational Competency Testing Institute or official scores submitted from a health care credential agency. Technological studies students are administered written examination to determine competence. Credit recommended by comparing scores with national norms.
Non-traditional format: Credit awarded based on test score/performance.

ETES 3110. Technical Field Skills. 3-12 hours. Repeatable for maximum 12 hours credit.
Corequisite: ETES 3100.
Performance achievement in technical field evaluation through National Occupational Competency Testing Institute or official scores submitted from a health care credential agency. Technological studies students are administered comprehensive performance examination on tasks common to specific occupational field. Credit recommended by comparing scores with national norms.
Non-traditional format: Credit awarded based on test score/performance.

ETES 2320-2320L. Creative Activities for Teachers Laboratory. 3 hours. 1 hour lecture and 4 hours lab per week.
Not open to students with credit in ETES 3320.
Demonstration and hands-on learning, including problem solving, designing, construction, and testing of prototypes, and activities that increase aesthetic, psychomotor, and cognitive development.

ETES 4350/6350. Developing Programs in Technological Studies. 3 hours.
Content identification, program organization, preparation of instructional objectives, and guidelines for selection and development of instructional materials for technological studies.

ETES 5010/7010. Technology and Society. 3 hours.
Impact of technology on society and culture. Included is the investigation of positive and negative aspects of various technologies, with specific attention to the technology education curriculum.

ETES 5020/7020. Communication Systems. 3 hours.
Communication technology in business and industry. Use of microcomputer applications for computer graphics, desktop publishing, electronic presentation, and telecommunications, including layout and design principles and procedures, graphic production systems, photographic processes, societal impacts, and innovative technologies.

ETES 5025/7025-5025L/7025L. Technical Design Graphics. 3 hours. 2 hours lecture and 2 hours lab per week.
Not open to students with credit in ENGR 1120.
Conventional practices for graphic representation of three-dimensional shape and size. Applications of computer-assisted drawing and design software, multi-view and pictorial projection, dimensioning, sections, auxiliary views, revolutions, descriptive geometry, and graphical vector analysis. Emphasis

on instructional approaches for teaching graphic communication in occupational studies.

ETES 5030/7030. Manufacturing Systems. 3 hours.
Manufacturing through the design, planning, and development of a specific product.

ETES 5040/7040-5040L/7040L. Construction Systems. 3 hours. 2 hours lecture and 2 hours lab per week.
Construction practices used to produce structures in residential and commercial settings. Special emphasis placed on safety in laboratory-based education.

ETES 5060/7060. Energy Systems. 3 hours.
Present and future applications of the technical, economic, and environmental aspects of energy systems and evaluation of their advantages and disadvantages.

ETES 5070/7070. Research and Experimentation in Technological Studies. 3 hours.
Solving technological problems through the analysis and implementation of technical research and experimentation methods. Suitable research and experimentation activities will be developed and analyzed for technology education programs in secondary schools.

ETES 5140/7140. Laboratory Planning, Management, and Safety. 3 hours.
Planning and managing laboratories, including the development of a safety program and selection of equipment, tools, and supplies.

ETES 5460. Student Teaching in Technological Studies. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Supervised student teaching experience in an existing technological studies program.
Non-traditional format: Supervised full-time experience in school setting.

(EXRS) Exercise Science

College of Education, Department of Exercise Science

EXRS 2010. Introduction to Exercise Science. 2 hours.
The exercise and sport sciences, including history, elementary concepts, methodologies, applications, and career opportunities.

EXRS 2100. Introduction to Athletic Training. 4 hours. 3 hours lecture and 2 hours lab per week.
Modern principles in the prevention, care, treatment, rehabilitation, and management of athletic related injuries and illnesses.

EXRS 2470. Practicum in Athletic Training. 1 hour. Repeatable for maximum 4 hours credit.2 hours lab per week.
Not open to students with credit in EXRS 3470.
The student will gain entry level knowledge and skills to function as a student athletic trainer. Each student will gain a minimum of 50 hours of clinical observation in an athletic training setting to obtain clinical experience.
Non-traditional format: Supervised practicum hours in athletic training setting.

EXRS 3100. Recognition and Evaluation of Athletic Injuries I. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: EXRS 2100.
Methods and techniques in the recognition and evaluation of athletic injuries to the upper body.

EXRS 3110. Recognition and Evaluation of Athletic Injuries II. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: EXRS 2100.
Methods and techniques in the recognition and evaluation of athletic injuries to the lower body.

EXRS 3240. General Medical Conditions in Athletic Training. 3 hours.
Prerequisite: EXRS 2100 and permission of department (Admission to Athletic Training Education Program).
Recognition and treatment of general medical conditions and disabilities of athletes and others involved in physical activity. Application of pharmacological principles in the treatment of illness, injury, and disease for an athletic population.

EXRS 3450. Practicum in Fitness and Conditioning. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of major.
Individual practical experience in exercise leadership, fitness testing, and clinical exercise testing conducted at the University of Georgia fitness center and recreational activity facilities.
Non-traditional format: Contact hours established by supervisor.

EXRS 3460. Practicum in Physical Therapy. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of major.
Prerequisite or corequisite: EXRS 3450.
Individual practical experience in physical therapy conducted at clinical settings under the supervision of certified physical therapists.
Non-traditional format: Contact hours established by supervisor.

EXRS 3480. Practicum in Exercise Science Research. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of school.
Individual practical experience assisting with research in exercise science.
Non-traditional format: Contact hours established by supervisor.

EXRS 3600. Applied Biomechanics. 2 hours.
Not open to students with credit in EXRS 4200/6200-4200L/6200L.
Prerequisite: CBIO 2200-2200L and MATH 1101.
Biomechanical principles of human motion and the structure of the human body. Laws of mechanics and tissue biomechanics concepts are applied to sport, dance, daily living activities, physical training, and injury etiology and prevention. Designed for the non-exercise-science major.

EXRS 3700. Applied Exercise Physiology. 2 hours.
Not open to students with credit in EXRS 4630/6630-4630L/6630L.
Prerequisite: CBIO 2200-2200L and CBIO 2210-2210L.
Physiological responses to exercise and adaptations to training. Influence of physical activity on health, design of conditioning programs, physical activity in select populations and conditions. Designed for non-exercise-science majors.

EXRS 3830. Measurement and Evaluation in Exercise Science. 3 hours.
Prerequisite: Permission of major.
Methods in measuring and evaluating physical performance, knowledge, and attitudes; procedures for evaluating tests and their results; data analysis techniques.

EXRS 3910. Clinical Experience in Athletic Training I. 1 hour. 2 hours lab per week.
Prerequisite: EXRS 2100 and EXRS 3470 and permission of department (Admission to Athletic Training Education Program).
Medical knowledge and clinical skills related to the practice of athletic training with a focus on general trauma, injury prevention, taping, and bracing.

EXRS 3920. Clinical Experience in Athletic Training II. 1 hour. 2 hours lab per week.
Prerequisite: EXRS 3100 and EXRS 3910.
Prerequisite or corequisite: Permission of department (Admission to Athletic Training Education Program).
Medical knowledge and clinical skills related to the practice of ahtletic training with a focus on lower extremity pathology, general medical conditions, and pharmacological practices in athletic training.

EXRS 4000. Special Problems in Exercise and Sport Science. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of school.
Independent study of selected topics in exercise and sport science.
Non-traditional format: Variable hours established by faculty.

EXRS 4100. Therapeutic Modalities in Athletic Training. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: EXRS 2100.
Therapeutic modalities in the treatment of athletic injuries, including cryotherapy, thermotherapy, electrical stimulation, ultrasound, traction, mobilization, and massage.

EXRS 4110. Rehabilitation Techniques in Athletic Training. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: EXRS 2100.
Rehabilitative techniques involving structured exercise for improving joint range of motion, strength, muscular endurance, balance, proprioception, and cardiovascular fitness used in the treatment of athletic injuries.

EXRS 4120. Administration of Sports Medicine. 3 hours.
Prerequisite: EXRS 4100 and EXRS 4110 and permission of school.
Advanced organization and administration principles in athletic training and sports medicine. Emphasizes the objectives, principles, and problems in the management of a comprehensive sports medicine program.

EXRS 4130-4130L. Athletic Training Emergency Care. 3 hours. 2 hours lecture and 2 hours lab per week.
Not open to students with credit in EXRS 2130.
Prerequisite: EXRS 2100 and EXRS 3470 and permission of department.
The basic principles of emergency medical care focused on athletic injuries. This is a comprehensive course for the athletic trainer who must initially evaluate and stabilize an athlete in a trauma situation. Using a lecture/laboratory format, rapid assessment, resuscitation, packaging, and transportation of the injured athlete are taught.

EXRS 4200/6200-4200L/6200L. Biomechanics I. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: Undergraduate level only: CBIO 2200-2200L and (PHYS 1111-1111L or PHYS 1211-1211L) and permission of school; Graduate level only: Permission of school.
Mechanical principles to human movement, equipment design, and injury.

EXRS 4300/6300. Exercise Epidemiology. 3 hours.
Undergraduate prerequisite: CBIO 2200-2200L and CBIO 2210-2210L and permission of major.
Graduate prerequisite: Permission of school.
Health-related aspects of exercise, physical activity, and physical fitness from the perspective of epidemiology. Biological mechanisms for healthy adaptations to physical activity and the behavioral determinants of exercise participation.

EXRS 4310/6310. Physical Fitness Programs. 3 hours.
Prerequisite: Permission of school.
Physical fitness programs for adults and special populations. Topics include program goals and objectives, principles and methods of physical fitness development and testing, evaluation of existing programs, and administrative and programming considerations.

EXRS 4320/6320. Exercise and Aging. 3 hours.
Prerequisite: EXRS 4630/6630-4630L/6630L and permission of school.
Biological and psychological effects of aging in relation to physical activity and exercise.

EXRS 4400/6400. Exercise and Sport Psychology. 3 hours.
Undergraduate prerequisite: PSYC 1101 and CBIO 2200-2200L and CBIO 2210-2210L and permission of major.
Graduate prerequisite: Permission of school.
Effects of participating in exercise and sport on psychological traits and states. Cognitive and neurobiological mechanisms and psychological limitations to athletic performance.

EXRS 4630/6630-4630L/6630L. Exercise Physiology I. 4 hours. 3 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: CBIO 2200-2200L and CBIO 2210-2210L and permission of major.
Graduate prerequisite: Permission of school.
Physiological effects of human physical activity. Neuromuscular, cardiovascular, respiratory, metabolic, hormonal, and thermal responses and adaptations to exercise.

EXRS 4640-4640L. Scientific Principles of Conditioning and Fitness. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: (EXRS 3700 or EXRS 4630/6630-4630L/6630L) and permission of school.
Designing and implementing individualized exercise prescriptions for athletic conditioning or physical fitness development. Development of skills required in conducting physical fitness tests for aerobic power, body composition, flexibility, and muscular strength and endurance.

EXRS 4690/6690-4690L/6690L. Exercise Physiology II. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: Undergraduate level only: EXRS 4630/6630-4630L/6630L and permission of school; Graduate level only: Permission of school.
Mechanics, energetics, and motor unit recruitment during skeletal muscle contraction; regulation of energy metabolism during exercise; mechanisms underlying oxygen delivery to muscle during exercise.

EXRS 4800-4800L. Biomechanics II. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: EXRS 4200/6200-4200L/6200L and permission of school.
Effects of mechanical forces on bones, muscles, and connective tissue. The biomechanics of specific regions of the body and mechanically-induced injuries are studied.

EXRS 4910. Clinical Experience in Athletic Training III. 1 hour. 2 hours lab per week.
Prerequisite: EXRS 3110 and EXRS 3920 and permission of department (Admission to Athletic Training Education Program).
Medical knowledge and clinical skills related to the practice of athletic training with a focus on upper extremity pathology and emergency care of athletic injuries.

EXRS 4920. Clinical Experience in Athletic Training IV. 1 hour. 2 hours lab per week.
Prerequisite: EXRS 4110 and EXRS 4910 and permission of department (Admission to Athletic Training Education Program).
Medical knowledge and clinical skills related to the practice of athletic training with a focus on therapeutic techniques.

EXRS 5450. Internship in Exercise and Sport Science. 3-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of school.
Practical experience in an off-campus sports medicine or health/fitness program.
Non-traditional format: Contact hours established by supervisor.

(FDNS) Foods and Nutrition

College of Family and Consumer Sciences, Department of Foods and Nutrition

FDNS 2000. Introduction to Family and Consumer Sciences. 1 hour.
The specialties and professions comprising the fields in family and consumer sciences. Systems perspective is emphasized in examining quality of

life issues. Discussions include the personal, professional, and technical elements involved in career development.

FDNS 2100. Human Nutrition and Food. 3 hours.
Nutritional needs and food choices for the optimal health of the individual during the life cycle.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

FDNS 2400. Introduction to Nutrition Science. 1 hour.
Orientation for new students in nutrition science. Problem-based discussions concerning the basic sciences relating to nutrition research.

FDNS 3010. Special Problems in Foods and Nutrition. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Independent study and research.
Non-traditional format: Directed study.

FDNS 3100. Macronutrients and Energy Balance. 3 hours.
Prerequisite: [(BIOL 1104 and 1104L) or BIOL 1108-1108L)] and FDNS 2100 and [(CHEM 2100 and CHEM 2100L) or (CHEM 2211 and CHEM 2211L)].
Human nutrition related to carbohydrates, lipids, protein, and energy with special emphasis on diet and performance under varying conditions of health. Topics include food sources, biochemical functions, and metabolism.

FDNS 3600-3600L. Food Principles. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: (CHEM 1110 and CHEM 1110L) or (CHEM 1211 and CHEM 1211L).
Food selection, preparation, evaluation, and composition.

FDNS 3610-3610L. Quantity Food Production. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: FDNS 3600-3600L.
Principles of food preparation in large quantities; institutional equipment and procedures.

FDNS 4050/6050. Optimal Nutrition for the Life Span. 3 hours.
Not open to students with credit in FDNS 4510/6510.
Prerequisite: FDNS 2100.
Nutritional needs of infants, young children, adolescents, pregnant and lactating women, and middle-aged and elderly people.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

FDNS 4100/6100. Micronutrient Nutrition. 4 hours.
Prerequisite: FDNS 3100 and BCMB (BIOL) (CHEM) 3100 and (CBIO 2210-2210L or VPHY 3100).
Human needs for vitamins, minerals, and electrolytes with emphasis on biochemistry, physiology, epidemiology, food sources, and their role in performance under varying conditions of age and health.

FDNS 4510/6510. Nutrition Related to the Human Life Cycle. 3 hours.
Prerequisite: FDNS 3100.
Nutritional health needs related to specific stages of the human life cycle. Special emphasis will be given to physiological changes and nutrition needs during pregnancy, lactation, infancy, childhood, adolescence, and adulthood.

FDNS 4520/6520. Dietetic Practice and Nutrition Support. 2 hours.
Corequisite: FDNS 4530/6530.
Specialized nutrition practice in the clinical setting including nutrition assessment, enteral and parenteral nutrition, and nutrition care documentation.

FDNS 4530/6530. Medical Nutrition Therapy. 4 hours.
Prerequisite: FDNS 4100/6100.
Diet modifications for disease prevention and treatment. Special emphasis is given to the study of gastrointestinal disease and metabolic, cardiovascular, and renal disorders.

FDNS 4540/6540. Public Health Dietetics. 3 hours.
Prerequisite: FDNS 4050/6050 or FDNS 4510/6510.
Nutrition in public health care and tools for successful management and delivery of nutrition services, including knowledge of community assessment, planning, implementation, and evaluation as related to nutritional care.

FDNS 4550/6550. Nutritional Biodynamics. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FDNS 3100.
Nutrients as precursors for organ and cell components and energy stores, emphasizing processes of turnover, growth, biosynthesis, and metabolism. Students will explore quantitative and dynamic issues using interactive computer modeling.

FDNS 4560/6560. Nutrition and Aging. 3 hours.
Prerequisite: (FDNS 3100 or FDNS 4050/6050) and (CBIO 2210-2210L or VPHY 3100).
Foods and nutrients in the health and well-being of the elderly; effects of aging on macro and micronutrient needs; influence of disease, medications,

economics, and culture; nutritional assessment, support, and services; health promotion and disease prevention; future directions for research.

FDNS 4580. Undergraduate Special Topics in Foods and Nutrition. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: FDNS 3100 or FDNS 4050/6050.
Selected topics from the field of foods and nutrition. Non-traditional format: Students will meet with faculty members on a regular basis.

FDNS 4600/6600. Food and the Consumer. 3 hours.
Prerequisite: FDNS 3600-3600L.
Health, safety, and policy issues related to food consumption trends; nutrient composition of foods, food additives, food allergies and hypersensitivities, naturally occurring toxins, pathogens, pesticides, biotechnology-derived foods, irradiated foods, and food laws and regulations.

FDNS 4610/6610. Foodservice Procurement and Financial Management. 2 hours.
Prerequisite: FDNS 3610-3610L.
Purchasing methods, specifications, storage and issuing procedures, inventory systems. Cost control, budgets, and financial statements used in foodservice organizations.

FDNS 4620/6620. Management of Foodservice Organizations. 3 hours.
Prerequisite: FDNS 4610/6610.
Management, staffing, and delivery systems as they pertain to the resources and organization of public and private foodservice institutions.

FDNS 4630/6630. Cultural Aspects of Foods and Nutrition. 3 hours.
Prerequisite: FDNS 2100.
Foodways, food habits, and food-related behavior of various population groups and their influences on the nutritional status of group members.

FDNS 4640/6640. Food Sanitation and Safety. 3 hours.
Prerequisite: FDNS 3600-3600L.
Safe food handling for foodservice and the consumer, with emphasis on causes and prevention of foodborne illness.

FDNS 4650/6650. Experimental Study of Food. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: [FDNS 2100 and FDNS 3600-3600L and (STAT 2000 or STAT 2210)] or permission of department.
Prerequisite or corequisite: (CHEM 2100 and CHEM 2100L) or (CHEM 2211 and CHEM 2211L).
Functional and nutritional properties of components in food products; techniques to evaluate food products for consumer acceptability including individual and group laboratory experimentation; computer applications.

FDNS 4660/6660. Delivery Systems for Food and Nutrition Information. 3 hours.
Prerequisite: FDNS 2100 and FDNS 3600-3600L and one course in Speech.
Transfer of food and nutrition information to consumers using various media.

FDNS 4710/6710-4710L/6710L. Catering. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FDNS 3610-3610L or permission of department.
Types of catering; establishing catering businesses; principles and practice of menu planning, work planning, food preparation, styles of service, cost accounting, and resource management.

FDNS 4720/6720. Menu Management and Service. 3 hours.
Prerequisite: FDNS 3610-3610L or permission of department.
Meal planning and service styles for individuals, families, and institutions; cultural, nutritional, marketing, and social aspects of foods; government regulations related to meal planning.

FDNS 4730/6730. Food Sales and Service. 3 hours.
Prerequisite: FDNS 3610-3610L or permission of department.
Effective sales and service techniques; market research and strategies specific to the foodservice industry.

FDNS 4740/6740. Food Service Facilities Planning and Development. 3 hours.
Prerequisite: FDNS 3610-3610L or permission of department.
Concepts, strategies, and skills needed in planning, designing, and equipping food service facilities.

FDNS 4750/6750. Foodservice Cost Controls and Systems. 3 hours.
Prerequisite: FDNS 4620/6620 or permission of department.
Cost control and accounting principles for the foodservice industry; manual and computer information systems for foodservice inventory and cost control.

FDNS 4900. Seminar in Foods and Nutrition. 1 hour.
Prerequisite: FDNS 3100.
Survey of current literature on selected topics in foods and nutrition.

FDNS 4960H. Directed Honors Research. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: FDNS 2100 and permission of Honors.

Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

FDNS 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed research with a faculty member.

FDNS 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Individual research with a faculty member.

FDNS 4990H. Honors Research. 3 hours.
Prerequisite: Permission of Honors.
Individual research in Foods and Nutrition or a closely related field.
Non-traditional format: Directed study.

FDNS 5010. Directed Research in Nutrition Science. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: FDNS 3100 or BCMB (BIOL) (CHEM) 3100.
Independent research designed for the nutrition science major. Literature review, laboratory work, experimental design, and interpretation of the results will be required.
Non-traditional format: Directed research.

FDNS 5020. Directed Research in Consumer Foods. 3-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: FDNS 3600-3600L and (STAT 2000 or STAT 2210) and permission of department.
Independent research in consumer foods, including literature review, laboratory work, experimental design, and interpretation of the results.
Non-traditional format: Directed study.

FDNS 5030. Directed Research in Dietetics. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: FDNS 3100.
Independent research designed for the dietetics major. Literature review, laboratory work, experimental design, and interpretation of the results will be required.
Non-traditional format: Directed research with format appropriate for research project. Variable hours.

FDNS 5300. Senior Thesis. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: FDNS 3100.
Research project and thesis writing.
Non-traditional format: Thesis.

FDNS 5300H. Honors Thesis. 1-3 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in FDNS 5300.
Prerequisite: FDNS 2100 and permission of Honors.
Individual research in the major field or in a closely related field to write a thesis.
Non-traditional format: Honors thesis.

FDNS 5800. Dietetics Practicum. 3 hours.
Prerequisite: FDNS 2100 and FDNS 3600-3600L and permission of department.
Work experience under the direction of a dietitian in a health care or foodservice facility.
Non-traditional format: Supervised work experience with a dietitian or other professional in the field of foods and nutrition.

FDNS 5910/7910. Foods and Nutrition Internship. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: FDNS 2100 and FDNS 3600-3600L and permission of department.
Supervised experience in dietetics, foodservice management, or a foods and nutrition related industry.
Non-traditional format: Supervised practice experience only. Variable hours.

FDNS 5930. Consumer Foods Internship. 3-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: FDNS 2100 and FDNS 3600-3600L and permission of department.
Work in a public or private institution to obtain practical professional experience.
Non-traditional format: Internship.

(FDST) Food Science and Technology

College of Agricultural and Environmental Sciences, Department of Food Science and Technology

FDST 2010. Food Issues and Choices. 3 hours.
Not open to students with credit in FDST 3000.
Scientific preservation of foods. Commercial food products will be viewed from historical, cultural, nutritional, chemical, microbiological, gustatory, and regulatory perspectives. Particular emphasis will be placed on food processes and packages designed to ensure safety and enhance quality.

FDST 2020. Art, Science, and the History of Beer. 1 hour.
Not open to students with credit in FDST(MIBO) 4120/6120-4120L/6120L.
Beer history, folklore, and science. Beer and brewing from the dawn of mankind through ancient

Sumaria, Pharoahs Egypt, Medieval Europe, Colonial America to today. Beer and society; religion, festivals, and prohibition. Beer and science; biochemistry, chemistry, food science, nutrition, microbiology, and engineering.

FDST 3000. Introduction to Food Science and Technology. 3 hours.
The sources of raw materials; the processing, storage, and handling of processed foods; and the problems involved in the processing of these products.

(FDST)ADSC 3650-3650L. Introductory Meat Science. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite or corequisite: BIOL 1108-1108L.
Meat science focusing on the meat industry, role of muscle foods in the human diet, meat inspection, muscle structure and function, conversion of muscle to meat, anatomy, factors influencing meat quality, meat processing, and meat safety and quality control.

FDST 3910. Food Science Internship. 3 hours.
Provides a practical educational experience while working in an operational food industry plant or laboratory.
Non-traditional format: At least ten weeks of full-time employment in a food processing plant or laboratory is required.

FDST 4000. Food Science Seminar. 1 hour.
Seminar on topics in Food Science.

FDST 4010/6010-4010L/6010L. Principles and Methods of Food Processing. 4 hours. 2 hours lecture and 6 hours lab per week.
Prerequisite: CHEM 2211 and CHEM 2111L and (FDST 2010 or FDST 3000).
Prerequisite or corequisite: MIBO 3000-3000L or MIBO 3500.
Principles of food preservation by chilling, freezing, dehydration, fermentation, and thermal processing. Processing methods to control microbial and enzymatic activity and to minimize chemical and physical deterioration of foods.

FDST(MIBO) 4030/6030-4030L/6030L. Food Microbiology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: MIBO 3000-3000L or MIBO 3500.
Interactions of microorganisms with food and the implications of these interactions for food preservation, safety, and fermentations. Pathogenic microorganisms associated with food. Analysis of foods for the presence of microorganisms.

FDST 4040/6040-4040L/6040L. Food Chemistry. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite or corequisite: FDST 3000 and FDST 4010/6010.
Chemical, physical, and functional properties of food constituents and ingredients.

FDST 4050/6050-4050L/6050L. Food Engineering Fundamentals. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: PHYS 1111-1111L and MATH 2200 and MATH 2200L.
Prerequisite or corequisite: FDST 4010/6010.
Mass and energy balance, fluid flow, heat transfer, and refrigeration in food plant operations. The theory, calculations and design practices, and equipment used in these operations, as well as the physical, chemical, and microbial changes that can occur in foods in processes employing these operations.

FDST 4060/6060-4060L/6060L. Food Engineering Fundamentals. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: FDST 4050/6050-4050L/6050L or permission of department.
Phase equilibria in foods, psychrometrics, water activity, freezing, dehydration, evaporation, membrane separations, extrusion, and process control.

FDST 4070/6070. Nutritional Quality and the Effect of Technology. 3 hours.
Prerequisite: FDST 4040/6040-4040L/6040L or BCMB (BIOL)(CHEM) 3100.
The nutritional properties of food and the effects of modern technology on nutritional quality.

FDST 4080/6080-4080L/6080L. Instrumental Methods of Food Analysis. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: (CHEM 2100 and CHEM 2100L) or (CHEM 2211 and CHEM 2211L).
Spectrophotometric, colormetric, chromatographic, and potentiometric methods of analysis as applied to food. Emphasis will be placed upon correlation and interpretation of results.

FDST 4090/6090-4090L/6090L. Food Quality Control. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: [FDST 2010 or FDST 3000] and STAT 2000.
Designing and implementing food quality and process control programs. Monitoring and controlling process specifications and capabilities. Developing food attribute and variable control charts. Examining food sampling plans and verifying HACCP food safety plans.

FDST 4100/6100. Governmental Regulation of Food Safety and Quality. 2 hours.
Role of mandatory and optional food laws and

regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness, and nutrition.

FDST 4110/6110-4110L/6110L. Food Packaging. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite or corequisite: FDST 3000.
Raw materials, processes, and machinery used in the transportation, storage, and marketing of packaged food products. The relationship between packaging materials, food processing operations, and product quality. Evaluation of chemical and physical properties of food package materials.

FDST(MIBO) 4120/6120-4120L/6120L. Food Fermentations. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: MIBO 3000-3000L or MIBO 3500.
Microbial and technical aspects of dairy, vegetable, meat, grain, and fruit fermentations. Products studied include cheese, sausage, beer, wine, and soy sauce.

FDST 4130/6130. Food Biotechnology. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 or permission of department.
Recombinant DNA in food and enzyme biotechnology, tissue culture, and microbial transformations. Applications and regulations of biotechnology in the fats and oils industry.

FDST(ADSC) 4140/6140-4140L/6140L. Advanced Meat Science. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FDST(MIBO) 4030/6030-4030L/6030L and FDST 4040/6040-4040L/6040L.
Meat processing and technology, scientific basis for meat as a food, USDA and FDA regulations governing meat processing, and the latest innovations in commercial meat processing.

FDST 4200. Food Science Forum. 1 hour.
Prerequisite or corequisite: FDST 4010.
Exercises and directed discussion on the transition from the classroom into the workplace and on the cultural aspects of food. Transforming technical knowledge in food science into marketable job skills and an appreciation for cultural diversity.

FDST 4250/6250-4250L/6250L. New Food Product Development. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: (FDST 4010/6010 and FDST 4040/6040-4040L/6040L) or permission of department.
New food product development, food constituents and functionality, ingredient functions and selection, sensory evaluation/application, dietary guidelines and food regulations affecting product development, new product development project management, protecting innovations, market testing.

(FDST)EHSC(MIBO) 4310/6310-4310L/6310L. Environmental Microbiology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: MIBO 3500.
Types of microorganisms in the environment; effect of environmental conditions on microbial existence; public health aspects of environmental microbiology; applications of microorganisms to solve environmental problems.

FDST(EHSC)(MIBO) 4320/6320-4320L/6320L. Microbiology of Food Sanitation. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: MIBO 3000-3000L or MIBO 3500.
Microorganisms and practices important in food industry sanitation and safety; microorganisms involved and control measures taken to prevent food borne illness, with emphasis on food process operations.

FDST 4800. Special Problems in Food Science. 1-3 hours.
Prerequisite: Permission of department.
Undergraduate research problems in food science.
Non-traditional format: Individual study, reading, and/or laboratory projects under the direction of a project director.

(FDST)POUL 4860L/6860L. Poultry Processing. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: POUL 3600 or FDST 2010 or FDST 3000 or permission of department.
Basic principles and methods of processing poultry and eggs. Broiler harvesting, slaughter, evisceration, plant sanitation, microbiology, inspection, grading, regulations, water and waste water handling, quality control and HACCP plans, further processing, and shell egg handling and processing.

FDST 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, and/or projects under the direction of a faculty member.
Non-traditional format: Students will complete the requirements for this course under the direction of a faculty member.

FDST 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, and/or projects under the direction of a faculty member.
Non-traditional format: Students will complete the requirements for this course under the direction of a faculty member.

FDST 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the field of the major or in a closely related field.

Non-traditional format: Students will complete the requirements for this course under the direction of a faculty member.

FDST 5010/7010-5010D/7010D. Food Formulation and Preservation. 3 hours. 1 hour lecture and 4 hours discussion per week.
Not open to students with credit in FDST 4010/6010.
Food preservation by chilling, freezing, fermentation, canning, and dehydration. Formulation of food products and interactions of food ingredients. Applications of principles to experiments in food science.

(FINA) Banking and Finance

Terry College of Business, Department of Banking and Finance

FINA 3000. Financial Management. 3 hours.
Not open to students with credit in FINA 3000H.
Prerequisite or corequisite: ACCT 2101 and (MIST 2090 or CSCI 1100-1100L).
The basic concepts and analytical tools of finance in both corporate finance and investments. Topics include risk and return, financial institutions, efficient markets, valuation theory, capital budgeting, portfolio theory, cost of capital, and international finance.

FINA 3000H. Financial Management (Honors). 3 hours.
Not open to students with credit in FINA 3000.
Prerequisite or corequisite: ACCT 2101 and (MIST 2090 or CSCI 1100-1100L) and permission of Honors.
The basic concepts and analytical tools of finance in both corporate finance and investments. Topics include risk and return, financial institutions, efficient markets, valuation theory, capital budgeting, portfolio theory, cost of capital, and international finance. Discussion and analysis of specific applications of these topics.

FINA 4000. Money and Capital Markets. 3 hours.
Prerequisite or corequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
The operations and functions of domestic and international finance markets and institutions. The determinants of bond prices and the level and structure of interest rates. Techniques for measuring and managing risk in financial markets.

FINA 4150. Investment and Portfolio Management. 3 hours.
The fundamental principles of finance as applied to investment, portfolio management, and firms. Emphasis on risk, return, and valuation of securities, other investments, and general cash flows. This is a business elective for business majors (not open to finance majors) and is available for non-business majors.

FINA 4200. Corporate Finance Theory. 3 hours.
Prerequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
Development of a framework that is useful for understanding a broad range of important corporate financial decisions. Substantial emphasis will be placed on discussion of the determinants of corporate financing and payout policies, alternative methods of security issuance, and mergers and acquisitions.

FINA 4210. Applied Corporate Finance. 3 hours.
Prerequisite or corequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
Corporate financial decision making by applying the tools, techniques, and theories of finance to actual business decisions.

FINA 4280/6280. Small Business Finance. 3 hours.
Prerequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
Principles of small business finance and the raising and management of venture capital, financial planning, forecasting, capital budgeting, working capital management, and sources of capital. This course is aimed at students planning careers in either small business management or in small business consulting.

FINA 4310. Survey of Investments. 3 hours.
Prerequisite or corequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
The securities markets, investor objectives, introduction to portfolio theory and the analytical tools of portfolio management, and an examination of investment alternatives.

FINA 4320. Derivative Security Markets. 3 hours.
Prerequisite: FINA 4310 and MATH 2200 and MATH 2200L.
Prerequisite or corequisite: FINA 3000.
The markets for futures, options, and other derivative securities. The mechanics of trading, regulation, pricing, hedging, and risk management using derivatives.

FINA 4380. Security Analysis. 3 hours.
Prerequisite: FINA 4310.
Prerequisite or corequisite: FINA 3000.
The determinants of values for individual securities with the emphasis on common stocks. Financial statement analysis, forecasting techniques, and financial modeling.

FINA 4420. Management of Financial Institutions. 3 hours.
Prerequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
Asset, liability, and capital management for firms operating in the dynamic environment of the financial-services industry. The acceptance, measurement, and management of risk, both on and off the firm's balance sheet, arising from unexpected changes in interest rates, exchange rates, and commodity prices. Financial-firm simulation game.

FINA 4600. Public Finance. 3 hours.
Prerequisite or corequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
Public finance at the federal, state, and local levels. Governmental revenues and expenditures, intergovernmental fiscal relations, public debt, and fiscal policy.

FINA 4800. Internship and/or Cooperative Education. 3 hours.
Prerequisite: FINA 3000.
Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. An in-depth paper based on an approved banking or finance topic is required.
Non-traditional format: Internship not involving formal lecture or laboratory.

FINA 4810/6810. International Finance. 3 hours.
Prerequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
International business decision making emphasizing the effects of internationalized financial and non-financial markets. Exchange rate analysis, hedged costs of funds, economic exposure and management, capital budgeting, financial and corporate strategy, and the evaluation of international risks and returns.

(FINA)AAEC 4870/6870. Futures and Option Markets. 3 hours.
Prerequisite: Undergraduate level only: AAEC 2580 or ECON 2106.
Development, functions, and importance of futures and option markets. Futures and option contracts; issues such as speculation, the roles of commission houses, commodity exchanges, and clearinghouses; and the use of future contracts as instruments for financing business activities. Technical and fundamental trading theories.

FINA 4920. Special Topics in Finance. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite or corequisite: FINA 3000 and (MSIT 3000 or STAT 3000).
Individual, advance study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study not involving lecture or laboratory.

(FINA)REAL 5100. Real Estate Finance. 3 hours.
Prerequisite: REAL 4000 or any 4000-level FINA course.
The instruments, techniques, and institutions of real estate finance; sources of funds; mortgage risk analysis: emphasis on typical policies and procedures used in financing of residential, industrial, and commercial properties.

(FORS) Forest Resources

Warnell School of Forest Resources

FORS 3000-3000L. Field Orientation and Measurements in Forest Resources. 4 hours. 2 hours lecture and 8 hours lab per week.
Prerequisite: (Enrollment in Professional Program of WSFR).
Land measurements and mapping; forest, wildlife, fisheries, and environmental resource observation and measurement. Use of School computer facilities for the analysis of measurement data and the development of summary descriptions of forest resources systems.

FORS 3010-3010L. Dendrology. 3 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite or corequisite: BIOL 1108-1108L.
Identification, classification, silvical characteristics and distribution of trees, shrubs, and other plants of importance to the management of forest resources.

FORS 3020-3020L. Forest Ecology. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: (Enrollment in Professional Program of WSFR) or permission of school.
Corequisite: FORS 3010-3010L or BTNY 4650/6650-4650L/6650L.
Individual, population, community and ecosystem processes regulating forest structure and function; interactions and functions of forest plants, animals, and microbes; effects of site, environmental factors, and disturbance on forest composition and dynamics.

FORS 3040. Tree Physiology. 2 hours.
Prerequisite: (Enrollment in Professional Program of WSFR) or [(BIOL 1108-1108L or BTNY 1210 and BTNY 1210L) and permission of school].
The vital processes and structures of woody plants: photosynthesis, respiration, carbon allocation, water relations, mineral nutrition, intrinsic and environmental factors controlling growth, reproduction, and plant morphology and wood anatomy. Human efforts to improve forest trees, including breeding, in vitro propagation, and genetic engineering.

(FORS)CRSS 3060-3060L. Soils and Hydrology. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in CRSS 3050-3050L.
Prerequisite: CHEM 1211 and CHEM 1211L.
Soil formation and morphology, physical and chemical properties, soil-water interactions, hydrologic processes and water balance in the landscape, and soil and water quality. Emphasis on landscape management of soil and water resources for both productivity and environmental quality.

FORS 3300. Introduction to Fish and Wildlife Management. 2 hours.
Prerequisite: BIOL 1108-1108L.
Principles governing conservation and management of fish and wildlife. The interrelations of wildlife management and other forest resource uses.

(FORS)RLST 3310. Outdoor Recreation and Environmental Awareness. 3 hours.
Prerequisite: Permission of major.
Environmental policies and land ethics of natural resource management agencies. Emphasis will be placed on understanding outdoor recreation behavior and issues arising from human-environment interactions, including carrying capacities and human-wildlife conflicts.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

FORS 3500. Wood Properties and Utilization. 2 hours.
Prerequisite: (Enrollment in Professional Program of WSFR).
Corequisite: FORS 3040.
Major uses of wood, characteristics of major wood products, processes involved in their manufacture and marketing, and properties of the wood raw material affecting its quality and use.

FORS(MARS) 3570. The Law of Earth Protection and Resource Use. 3 hours.
Not open to students with credit in AAEC 4930/6930 or FORS 5820/7820.
A first course in legal studies, and an introduction to environmental and natural resources law. Basics of the legal system; selected major protection and resource statutes, regulations, roles and methods of agencies; significant judicial opinions.

FORS(ECOL) 3580-3580L. Vertebrate Natural History. 5 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Life history strategies of vertebrates with emphasis on ecology, behavior, taxonomy, and systematics.

FORS 3610-3610L. Forest Biometrics. 3 hours. 2 hours lecture and 2 hours lab per week.
Corequisite: FORS 3000-3000L.
Basic parametric statistical methods and concepts, including linear models, sample survey design and analysis, and applications to problems in forest resources. Analysis of forest resources data using standard statistical software.

FORS 3710-3710D. Forest Resource Economics and Management. 3 hours. 2 hours lecture and 2 hours discussion per week.
Prerequisite: (Enrollment in Professional Program of WSFR).
Theory and analytical tools used in forest resource management decision making. Topics include the role of economics in forest resource decision making, microeconomic principles, price formation and valuation of non-market outputs.

FORS 3910-3910L. Spatial Information in Forest Resources. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: FORS 3000-3000L.
Interpretation and use of maps, aerial photographs, and satellite imagery in forest resources; production of maps from field measurements; determination of land area and ownership; interpretation of contour maps. Spatial data bases: concepts and use.

FORS 3950. Forest Operations Study Tour. 2 hours.
Prerequisite: FORS 3500 or FORS 4010-4010L or permission of school.
Visits to active forestry operations in the Southeast. Forest management operations, harvesting and transportation operations, and conversion facilities such as pulp/paper mills, sawmills, and other processing plants will be emphasized. Students are expected to pay for room and board.
Non-traditional format: Class involves a week-long field trip before the beginning of fall semester.

FORS 3960. Forest Resources Internship. 2 hours. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of school.
Work for sixty to ninety days on at least three different professional-level assignments with a business, government agency or other professional organization. Repeatable for maximum eight hours credit, but no more than two hours may be counted toward graduation.
Non-traditional format: Internship.

FORS 4000/6000-4000L/6000L. Forest Soil Management. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L.
Corequisite: FORS 4010-4010L.
Morphological, physical, and chemical soil properties affecting tree growth and forest productivity;

evaluation of soils and site quality; preparation of forest sites for planting, diagnosis, and correction of nutrient limitations; use of forest soil systems for waste treatment.
Non-traditional format: One Friday and one Friday-Saturday field trip are required.

FORS 4010-4010L. Silviculture. 4 hours. 3 hours lecture and 5 hours lab per week.
Prerequisite: FORS 3000-3000L and FORS 3020-3020L.
Theory and techniques of controlling regeneration, density, species composition, health, and quality of forest stands. Treatments studied include seeding and planting of tree species; thinning and regeneration cuts; and appropriate use of fire, pesticides, and fertilizers.

FORS 4020/6020. Genetics and Breeding of Forest Trees. 3 hours.
Prerequisite: BIOL 1108-1108L.
Genetic variation in forest trees; harnessing natural variation and creating new variation to meet breeding objectives; biological and economic consequences of tree domestication; conservation of genetic resources.

FORS 4030/6030. Regional Silviculture. 3 hours.
Prerequisite: FORS 4010-4010L.
Identification of the major forest regions of the United States and discussion of their silvicultural management.

FORS 4050/6050-4050L/6050L. Field Mammalogy. 4 hours. 3 hours lecture and 3 hours lab per week.
Not open to students with credit in ECOL 4030/6030-4030L/6030L.
Prerequisite: FORS(ECOL) 3580-3580L or permission of school.
Mammalian diversity with emphasis on taxonomic identification, systematics, natural history, and methods of field study.

FORS 4060/6060-4060L/6060L. Field Ornithology. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: FORS(ECOL) 3580-3580L or permission of school.
Bird identification, also emphasizing ecology, evolution, behavior, and field techniques.
Non-traditional format: Overnight field trip required.

FORS 4110/6110-4110/6110L. Forest Hydrology. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: ENGR 3410 or CRSS(FORS) 3060-3060L or GEOL 4220/6220 or GEOG 4030/6030 or ECOL 3520 or CRSS 4600/6600-4600L/6600L.
Multidisciplinary examination of the terrestrial components of the hydrologic cycle focusing on the qualitative analysis of precipitation, snowmelt, runoff generation, routing, infiltration, and subsurface flow and transport. Emphasis is on the definition of hydrologic processes, identification of hydrologic resources, development of environmental monitoring techniques, and application to hydrologic resources management.

FORS 4120/6120. Quantitative Methods in Hydrology. 3 hours.
Prerequisite: ENGR 3410 or CRSS(FORS) 3060-3060L or FORS 4110/6110-4110L/6110L or GEOL 4220/6220 or GEOG 4030/6030 or CRSS 4600/6600-4600L/6600L or permission of school.
Advanced analysis of hydrologic processes to provide a theoretical understanding of precipitation, evapotranspiration, streamflow, groundwater occurrence and movement, and soil zone flow and transport. Emphasis is upon quantitative methods used in conjunction with field and laboratory data to identify flow and transport dynamics in hydrologic systems.

FORS 4130L/6130L. Field Methods in Hydrology. 2 hours. 4 hours lab per week.
Prerequisite: ENGR 3410 or CRSS(FORS) 3060-3060L or FORS 4110/6110-4110L/6110L or GEOL 4220/6220 or GEOG 4030/6030 or CRSS 4600/6600-4600L/6600L.
Field data acquisition methods to hydrologic systems are used to determine precipitation quantity and quality, evapotranspiration, streamflow, groundwater occurrence and movement, and soil zone transport processes. Physical and chemical measurements are coupled to determine flow paths, mass balances, and the environmental fate of solutes.

FORS 4140-4140L. Introduction to Wetlands. 3 hours. 2 hours lecture and 3 hours lab per week.
Introduction to wetland systems and regulation. Wetland geomorphology, hydrology, soils, chemistry, vegetation, animal communities, response to land management, functional description, and legal considerations. Practical training in measuring and characterizing wetland features as well as delineating wetland boundaries and assessing wetland function.

FORS 4150. Environmental Systems. 2 hours.
Prerequisite: FORS 4120/6120 or permission of school.
Use of systems theory for environmental problems. Linear and nonlinear response to inputs using convolution and deconvolution. Applications include surface- and ground-water hydrologic and solute transport behavior. Problems related to land application of wastes and wetland processes will be addressed.

FORS 4160/6160-4160L/6160L. Environmental Monitoring. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: CRSS(FORS) 3060-3060L and STAT 2000.
Design, implementation, and interpretation of sampling programs for environmental systems (especially aquatic systems) for monitoring, regulatory activities, quality control, scientific study, and impact assessment.

(FORS) (ANTH) (BIOL) (BTNY) ECOL (ENTO) (GEOG) (GEOL) (PATH) 4261. Museum of Natural History Internship. 3 hours. Repeatable for maximum 6 hours credit. 7 hours lab per week.
Prerequisite: Permission of instructor and permission of Museum of Natural History.
Supervised work experience with a natural history collection. Students will learn techniques and other procedures for curating materials in a collection of their choice under the direction of collection personnel.
Non-traditional format: Students will maintain regular, weekly work schedules totaling 7 hours per week under the supervision of faculty and other collection personnel in the Museum of Natural History.

(FORS) (ANTH) RLST 4270. Field Studies in Natural Resource Recreation and Tourism. 3-6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Field studies to explore natural and cultural resource management issues including recreation, forestry, wildlife, tourism, environmental education, habitat conservation, and cultural land practices.
Non-traditional format: Two different options are available: (1) 4-week study abroad in New Zealand, Maymester (6 credits). (2) 1-week field study in Great Smokies National Park, summer semester (3 credits).

FORS 4300/6300-4300L/6300L. Management of Wildlife Habitat. 4 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: [FORS 3020-3020L and FORS 3300] or permission of school.
Principles and practices related to the management of forested ecosystems for wildlife and biological diversity, with emphasis on habitat management at the stand and landscape level. Habitat management through use of appropriate silvicultural practices, wildlife enhancement techniques, and regulations is evaluated.

(FORS)ECOL 4310/6310-4310L/6310L. Limnology. 4 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: ECOL(BIOL) 3500-3500L or FORS 3300.
Aquatic ecosystems (lakes and streams) and their biota. Linkages between terrestrial and aquatic ecosystems.

FORS 4320/6320. Wildlife Physiology and Nutrition. 3 hours.
Prerequisite or corequisite: FORS 3300 or permission of school.
An advanced course relating animal physiology and nutrition to wildlife ecology and management.

FORS 4330/6330-4330L/6330L. Water Quality Management in Fisheries and Aquaculture. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: CHEM 1212 and CHEM 1212L.
Chemical and biological aspects of water quality, with emphasis upon relationships between water quality and fish production. Practical information on water quality management and related fields.

FORS 4340/6340. Endangered Species Management. 3 hours.
Prerequisite: FORS(ECOL) 3580-3580L or FORS 3010-3010L or BTNY 4650/6650-4650L/6650L or permission of school.
Factors affecting extinctions and declines in biodiversity, including laws, policies, and management activities designed to protect species and critical habitats.

FORS(ECOL) 4360/6360. Fish Ecology. 4 hours.
Prerequisite: ECOL(BIOL) 3500-3500L or FORS 3020-3020L.
Prerequisite or corequisite: ECOL 4050/6050-4050L/6050L.
Lectures and discussions will be used to provide an interactive exploration of the ecology of fishes. Topics include: foraging, reproduction, habitat selection, niche, competition, and the mechanisms controlling fish biodiversity. Instruction includes both the status of a topic and appropriate research designs. The latter materials will be relevant to most animal taxa.

FORS 4370/6370-4370L/6370L. Fish Physiology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: ECOL 3260-3260L or permission of school.
Basic fish physiology with an emphasis on the effects of environmental stresses on physiological functions of fish.

(FORS)MARS 4380/6380-4380L/6380L. Marine Fisheries Biology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1108-1108L and permission of department.
Interaction of oceanographic processes with the life histories and productivity of marine fisheries

species, and the human interactions with major marine fisheries.

FORS 4500-4500L. Introduction to Wood Technology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FORS 3500.
Material science of wood, including wood structure, physical/mechanical properties, and how wood products are affected by the material characteristics.

FORS 4510-4510L. Processes in Wood Products Manufacturing. 3 hours. 2 hours lecture and 3 hours lab per week.
Corequisite: FORS 4500-4500L.
Wood machining, drying, gluing, grading, and finishing.

FORS 4570L/6570L. Practical Wood Identification. 2 hours. 4 hours lab per week.
Identification of domestic and commercial tropical woods.

FORS 4610/6610-4610L/6610L. Forest Mensuration. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FORS 3000-3000L and FORS 3610-3610L.
Direct measurement and indirect estimation of primary and secondary forest products. Measures of stand productivity, density, and growth.

FORS 4620/6620. Timber Management. 3 hours.
Prerequisite: FORS 4610/6610-4610L/6610L.
Organization and management of forest properties for the production of commercial forest products.

FORS 4630L/6630L. Computational Methods and Computer Models in Forestry. 2 hours. 4 hours lab per week.
Prerequisite: FORS 4610/6610-4610L/6610L.
Spreadsheets and forestry software packages to solve inventory and growth prediction problems.

FORS 4640/6640-4640L/6640L. Forest Inventory. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FORS 4610/6610-4610L/6610L.
Planning forest inventories and comparison of various equal and unequal probability sampling concepts; permanent and temporary forest sampling procedures; current stand and future growth estimation principles.

FORS 4710/6710-4710L/6710L. Quantitative Decision Methods for Forest Management. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: FORS 3610-3610L and FORS 3710-3710D.
Analysis methods applicable to forest management planning and decision making in forestry. Particular emphasis on optimization procedures and financial analysis.

FORS 4730. Senior Project in Forest Resources Management. 4 hours. 1 hour lecture and 1 hour lab per week.
Not open to students with credit in FORS 4750.
Prerequisite: FORS 3710-3710D.
Advanced problems in forest resources management integrating all courses to date.
Non-traditional format: Remaining hours are scheduled by students to fulfill project requirements. Includes substantial field work.

FORS 4750. Senior Thesis in Forest Resources. 4 hours.
Not open to students with credit in FORS 4730.
Prerequisite: Permission of school.
Supervised research integrating material from courses in the student's field of study. Written and oral presentation of research results and their significance.
Non-traditional format: Students may attend some lectures offered in Senior Project in Forest Resources Management. Students meet with thesis advisor on arranged basis. Students schedule own laboratory and field work.

FORS 4800/6800-4800D/6800D. Forest Resources Policy. 3 hours. 2 hours lecture and 1 hour discussion per week.
Prerequisite: FORS 3710-3710D or permission of school.
Forest policy as a process, establishing forestry agendas, political decision models, political institutions and interest groups, policy in organizations, current issues.

FORS 4890/6890. Field Methods in Wildlife Management and Research. 1 hour.
Prerequisite: Permission of school.
Field course providing personal experience in field methods used by wildlife biologists (prescribed burning, wildlife capture/handling, population assessment, radiotelemetry, habitat surveys, etc.).
Non-traditional format: This course will be taught entirely in the field during the Maymester. An intensive 6-day and 5-night field trip to an off-campus site is required.

FORS 4900/6900-4900L/6900L. Wildlife Damage Management. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: FORS 3300 or FORS(ECOL) 3580-3580L or permission of school.
Theory and practice of assessing and controlling damage done by wild and feral vertebrate animals, especially mammals and birds. Emphasis is on protecting agricultural and forest crops and property.

FORS 4910. Wildlife Management Issues. 3 hours.
Prerequisite: FORS 3300 or FORS(ECOL) 3580-3580L or permission of school.
Biological, social, and political aspects of wildlife management issues and their solutions.

FORS 4920H. Honors Seminar in Natural Resources Ecology. 3 hours.
Prerequisite: [ECOL(BIOL) 3500-3500L or FORS 3020-3020L] and permission of school and permission of Honors.
Basic and applied ecological research, including scientific methodology, similarities and differences between basic and applied research, and specific topics (e.g., the relationship between environmental variation and biodiversity, population regulation in disturbed and undisturbed systems). Theoretical approaches to nature reserve design, randomness and pattern in natural systems.

FORS 5010/7010. Urban Tree Management. 3 hours.
Prerequisite: BTNY 1210 and BTNY 1210L or BIOL 1104 and BIOL 1104L or BIOL 1108-1108L.
Establishment and maintenance of trees in urban environments. Nature and benefits of trees, planting, and soil management; pruning, repair, and protection; stress management; values of urban trees.

FORS 5250/7250. International Issues in Wildlife Conservation. 2-4 hours. Repeatable for maximum 6 hours credit.
An overseas, field-based course that explores wildlife conservation and management topics and issues in the host country. Includes lectures and field projects related to sustainable use of wildlife and human conflicts with wildlife.
Non-traditional format: This will be a field course held during Maymester or summer session. It will consist of travel to a foreign country and focus on a series of wildlife management topics that are relevent in that country. We intend to initiate this course in Uganda where we have contacts with Makerere University. During this course we will travel to the Budongo Forest among other locations and study wildlife issues relative to tropical forests and timber harvest in those forests. We will also travel to Lake Mburo National Park to study the problems of large mammals moving out of the park to private land and encroachment of adjacent cattle ranches on park wildlife.

FORS 5310/7310-5310L/7310L. Techniques in Wildlife Population Management. 4 hours. 2 hours lecture and 6 hours lab per week.
Prerequisite: [FORS(ECOL) 3580-3580L and PGEN 3580] or permission of school.
Field and laboratory methods commonly used by professional wildlife ecologists to analyze and manipulate animal populations.

FORS 5360/7360-5360L/7360L. Fisheries Management. 3 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Principles, methods, and techniques used in the management of freshwater and marine fisheries resources. Practical, theoretical, and ethical questions are addressed.

FORS 5380/7380-5380L/7380L. Fish Culture. 3 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Biological and abiological aspects of extensive and intensive culture of freshwater fishes. Emphasis is on species and methods utilized in the eastern United States.

(FORS)RLST 5400/7400-5400L/7400L. Park Management. 3 hours. 2 hours lecture and 2 hours lab per week.
Management of public lands and open spaces, including management tools, type and nature of physical effects, visitor management principles, and site development. Use of maps, aerial photos, and compass in recreation area development.

FORS 5410/7410. Wilderness Management. 3 hours.
Origins of the wilderness movement; wilderness values; scope of wilderness management as limited by laws and philosophy; principles of wilderness management; and review status and management of non-roaded natural areas.

FORS 5720/7720-5720L/7720L. Forest Harvesting and Roads. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: FORS 3000-3000L.
Prerequisite or corequisite: FORS 4010-4010L.
Techniques and systems for harvesting and roading forests. Production, cost, quality, safety, and environmental protection measures. Field exercises stress planning of harvesting and road construction operations to achieve desired objectives.

FORS 5730/7730. Principles of Forest Management. 3 hours.
Prerequisite: BIOL 1104 and BIOL 1104L or BTNY 1210 and BTNY 1210L or permission of school.
Practical forestry in the South with emphasis on the management of private forest land. Topics include forest regeneration, tree identification and growth, basic measurements of tree crops. Not open to FRS majors.

FORS 5740/7740. Forest Operational Planning. 3 hours.
Prerequisite: (FORS 3710-3710D and FORS 4010-4010L and FORS 4620/6620) or permission of school.
Integration of silviculture, finance, forest engineering, biometrics, and ecology to analyze industrial problems.

FORS 5750/7750. Procurement and Management of Wood Fiber Supply. 3 hours.
Prerequisite: (Enrollment in Professional Program of WSFR) or permission of school.
Management of the wood fiber supply, program management functions, legal aspects and analysis of current issues in raw material management.

FORS 5760/7760. Forest Products Marketing. 3 hours.
Prerequisite: (Enrollment in Professional Program of WSFR) or permission of school.
Planning, organizing, and managing forest products marketing programs, domestically and internationally. Focus on developing marketing strategies and implementation of marketing plans in the context of forest industry structures and distribution channels.

FORS 5770/7770-5770L/7770L. Applied Population Dynamics. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Senior standing or graduate student.
Foundations of population dynamics from an applied perspective. Exponential and logistic population growth, life tables, multiple species interactions, and basic population models. Sampling design and analytical methods for estimating abundance and demographic parameters. Application of population models to harvest management and small population management. Integrative student project required.

FORS 5820/7820. Natural Resources Law for Managers and Administrators. 4 hours.
Statutory, case law, and regulations concerning resource conservation, allocation, and development. Modern, systems-sensitive regulatory programs affecting natural resources administration analyzed. Examination of the division and nature of the functions of the judicial and executive branches of government.
Non-traditional format: Law library exercise requiring sixty or more hours per semester.

FORS 5850/7850. Forest Policy Issues. 2 hours.
Prerequisite: POLS 1101 or FORS 4800/6800-4800D/6800D.
Forestry issues and political processes. A general framework for analyzing current issues is developed and specific issues are analyzed each year.

FORS 5920. Directed Readings or Projects in Forest Resources. 1-5 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of school.
Individual study, including readings, research, or other projects, in a specialized area of forest resources, under the supervision of a faculty mentor.
Non-traditional format: All work is done outside of a classroom setting.

FORS 5930. Special Topics in Forest Resources. 1-4 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of school.
Special-interest or experimental courses offered on a one-time basis. Course content will vary with each offering.
Non-traditional format: Lecture/lab hours will be determined by course instructor as appropriate to topic and credit hours assigned.

(FREN) French

College of Arts and Sciences, Department of Romance Languages

Certain courses in French are not open to native speakers. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was French.

FREN 1001. Elementary French. 4 hours.
Not open to students with credit in FREN 1002 or two or more years of French in high school.
The French language and French-speaking cultures. Open only to students who have fewer than two units of high school French. Emphasis is on conversational skills with attention to reading, writing, and listening comprehension. Work in the language laboratory.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

FREN 1002. Elementary French. 4 hours.
Not open to students with credit in FREN 1110.
Prerequisite: FREN 1001.
A continuation of Elementary French. Emphasis is on conversational skills with attention to reading, writing, and listening comprehension. Work in the language laboratory.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

FREN 1110. Accelerated Elementary French. 4 hours.
Not open to students with credit in FREN 1001 or FREN 1002 or college credit in French.
Prerequisite: Placement Test.
Accelerated course reviewing basic principles of the

French language for students with some background of high school French.

FREN 2001. Intermediate French. 3 hours.
Not open to students with credit in FREN 2002.
Prerequisite: FREN 1002 or FREN 1110.
Speaking, listening, reading, and writing French at the intermediate level. Pronunciation, conversation, grammar review, reading of texts and compositions. Not open to native speakers.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

FREN 2002. Intermediate French. 3 hours.
Not open to students with credit in FREN 2120H.
Prerequisite: FREN 2001.
Continuation of the basic curriculum of Intermediate French, with an emphasis on strengthening the speaking, listening, reading, and writing skills of the intermediate student. Pronunciation, conversation, grammar review, reading of texts and compositions. Not open to native speakers.

FREN 2030. Practical French Conversation. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: FREN 2001.
Emphasis is on improving oral expression and developing conversational skills through social interactions, under the direction of the French Resident Language Coordinator. Given in French, in the University Language Community.

FREN 2120H. Accelerated Intermediate French (Honors). 3 hours.
Not open to students with credit in FREN 2001 or FREN 2002.
Prerequisite: (FREN 1002 or FREN 1110) and permission of Honors.
Course covers materials studied in Intermediate French. Emphasis on advanced readings and grammar review. Also prepares students to enter French Conversation and Composition, Introduction to French Literature, and Introduction to French Linguistics. Not open to native speakers.

FREN 2500. French for Reading Knowledge. 3 hours.
Grammar, idioms, and vocabulary; practice in translating moderately difficult technical and non-technical French. Intended to assist graduate students to satisfy reading knowledge requirement but does not carry graduate credit. Not to be used to satisfy undergraduate language requirement. Not open to French majors.

FREN 2950. Study Abroad in French. 3 hours.
Prerequisite: Permission of department.
French language, literature, and culture courses taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

FREN 2960. Study Abroad in French. 3 hours.
Prerequisite: Permission of department.
French language, literature, and culture courses taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

FREN 2970. Study Abroad in French. 3 hours.
Prerequisite: Permission of department.
French language, literature, and culture courses taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

FREN 3010. French Conversation and Composition. 3 hours.
Prerequisite: FREN 2002 or permission of department.
The emphasis is divided between oral and written expression. Composition and conversation are integrated into the context of French and Francophone culture. Given in French. Not open to native speakers.

FREN 3010H. French Conversation and Composition (Honors). 3 hours.
Not open to students with credit in FREN 3010.
Prerequisite: FREN 2002 and permission of Honors.
Practice in composition and conversation skills in French, beyond French Conversation and Composition. Emphasis is divided equally between composition and conversation. Not open to native speakers. Given in French.

FREN 3030. Introduction to French Literature. 3 hours.
Not open to students with credit in FREN 3030H.
Prerequisite: FREN 3010.
Selected French and Francophone texts in their social and linguistic contexts. Given in French.

FREN 3030H. Introduction to French Literature (Honors). 3 hours.
Not open to students with credit in FREN 3030.
Prerequisite: FREN 2120H and permission of Honors.
Selected French and Francophone texts in their social and linguistic context. Given in French.

FREN(LING) 3090. Introduction to French Linguistics. 3 hours.
Prerequisite: FREN 3010.
The field of French linguistics, emphasizing such topics as the internal and external history of French; the sounds, forms, and vocabulary of modern French; and the linguistic variation within France and the French-speaking world.

FREN 4010. Advanced Conversation and Composition. 3 hours.
Prerequisite: FREN 3010.

Practice in composition and conversation skills in French, beyond French Conversation and Composition. Emphasis is divided equally between composition and conversation. Given in French. Not open to native speakers.

FREN 4050. French Literature and Culture to 1700. 3 hours.
Prerequisite: FREN 3030 and FREN(LING) 3090.
French literature and culture from the Middle Ages through the seventeenth century. Topics include representations of feudal society; courtly texts and contexts; the rise of the nation-state; Renaissance humanism; the culture of absolute monarchy; the emergence of the French novel. Given in French.

FREN 4060. French Literature and Culture 1700-1900. 3 hours.
Prerequisite: FREN 3030 and FREN(LING) 3090.
French literature and culture of the period covering the Enlightenment, the French Revolution, Romanticism, Realism, Naturalism, and "Belle Époque." Given in French.

FREN 4070. French and Francophone Literature and Culture Since 1900. 3 hours.
Prerequisite: FREN 3030 and FREN(LING) 3090.
Major works, literary movements, and cultural background of the modern and contemporary periods, including the relationship between mainland France and other areas of the French-speaking world. Texts will include examples of poetry, prose, and drama. Given in French.

FREN 4080. Studies in French Literature and Culture. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: FREN 3030 and FREN(LING) 3090.
Topics in French and Francophone studies: themes, movements, problems, artistic and cultural manifestations and their relationship to literary and intellectual developments. Topics can cover individual periods or several centuries, depending on instructor. Given in French.

FREN 4120/6120. Topics in French Culture, Language, and Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: FREN 3030 and FREN(LING) 3090.
Selected topics in French and Francophone culture, civilization, language, linguistics, literature, or literary theory. Given in French.

FREN 4150. Business French. 3 hours.
Prerequisite: FREN 3010 and (FREN 3030 or FREN(LING) 3090 or ACCT 2101).
French business and its environment. Topics might include creation of a business, banking, economic geography, interviewing, letter writing, advertising, communications, import-export, politics, the European Union. Given in French. Business students should check with their advisor for prerequisites.

FREN(LING) 4630. French Phonetics. 3 hours.
Prerequisite: FREN(LING) 3090.
The French sound system in theory and practice. How French sounds are formed and how they reflect social class and geographical origin. Work on pronunciation in class and the language laboratory. Given in French.

FREN 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and junior or senior standing.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

FREN 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and junior or senior standing.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

FREN 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and junior or senior standing.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

FREN 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors and senior standing.
Individual research in the major field or in a closely related field.
Non-traditional format: Students will meet with faculty members on a regular basis.

(FRES) Freshman Seminars

College of Arts and Sciences

FRES 1010. Freshman Seminar. 1-3 hours.
Prerequisite: Freshman standing.
Seminar for first-year students with faculty members in topics of interest pertinent to research, academic life, and higher education at the University of Georgia.

FRES 1020. Freshman Seminar. 1-3 hours.
Prerequisite: Freshman standing.
Seminar for first-year students with faculty members in topics of interest pertinent to research, academic life, and higher education at the University of Georgia.

(FRES)HONS 1990H. Honors Colloquia Seminar. 1 hour. Repeatable for maximum 4 hours credit. 1 hour lecture and 1 hour lab per week.
Prerequisite: Permission of Honors.
Attendance at University-sponsored lectures, symposia, colloquia, distinguished speaker series, and follow-up seminar meetings. Students will present written reports on lectures and discuss in seminars.

(GENE) Genetics

College of Arts and Sciences, Department of Genetics

GENE (BIOL) 3200. Genetics. 4 hours. 3 hours lecture and 1 hour discussion per week.
Prerequisite or corequisite: [BIOL 1104 and BIOL 1104L or BIOL 1108-1108L] and [BCMB(BIOL)(CHEM) 3100 or BCMB 4010/6010].
Genetic mechanisms in viruses, bacteria, and eukaryotic cells in a comparative sense. Topics include molecular genetics and gene action, transfer systems and mapping, cytological, quantitative, and population genetics.

GENE (BIOL) 3200H. Genetics. 1 hour.
Prerequisite or corequisite: [(BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L] and [BCMB (BIOL)(CHEM) 3100 or BCMB 4010/6010] and GENE(BIOL)3200.
Prerequisite or corequisite: GENE/BIOL 3200.
Genetic mechanisms in viruses, bacteria, and eukaryotic cells in a comparative sense. Topics include molecular genetics and gene action, transfer systems and mapping, cytological, quantitative, and population genetics. Seminar focusing on the scientific literature relevant to genetics, and discussions of topics in genetics.

GENE (BIOL) 3210L. Experimental Genetics. 3 hours. 6 hours lab per week.
Not open to students with credit in GENE(BIOL) 3210.
Prerequisite or corequisite: GENE(BIOL) 3200.
Drosophila, bacteria, phage and fungal systems for the analysis of mutation, transfer systems, mapping, complementation, population studies, and other genetic principles.

GENE 4200/6200. Advanced Genetics. 3 hours.
Prerequisite: GENE(BIOL) 3200 or PGEN 3580.
Prokaryotic, fungal, and mammalian genetic systems which form the basis of our understanding of molecular genetics. Techniques used in the analysis of the structure and function of viral and eukaryotic genomes.

GENE(BIOL) 4210L. Molecular Genetics Laboratory. 4 hours. 9 hours lab per week.
Prerequisite: GENE(BIOL) 3200.
Lab techniques in molecular genetics for advanced undergraduate students. Basic genetic and recombinant DNA approaches in contemporary molecular biology: use of computers for database searches, DNA sequence analysis, and molecular modeling.

GENE 4220. Computers in Experimental Genetics. 1 hour. Repeatable for maximum 10 hours credit.
Undergraduate computer course in Experimental Genetics.

GENE(BIOL) 4600/6600. Evolutionary Biology. 3 hours.
Prerequisite: (BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L.
An introduction to the processes of evolution. Topics include population genetics, speciation, systematics, coevolution, chemical origin of life, history of life, geological record, and evolution of humans.

GENE(PATH) 4700. Introductory Virology. 3 hours.
Not open to students with credit in MMIB 4500/6500-4500L/6500L.
Prerequisite: GENE(BIOL) 3200 or MIBO 3500 or permission of department.
Biology and genetics of vertebrate, invertebrate, and plant viruses, emphasizing their structure, replication strategies, gene expression, and pathogenesis.

GENE 4950. Senior Seminar in Genetics. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: GENE(BIOL) 3200.
Undergraduate senior seminar class in Genetics.
Non-traditional format: Students will meet with faculty members on a regular basis.

GENE 4960. Directed Reading and/or Projects. 2-4 hours. Repeatable for maximum 16 hours credit.
Individual study, reading, or projects under the direction of a faculty member.
Non-traditional format: Directed study.

GENE 4960H. Honors Readings Genetics. 2-4 hours.
Not open to students with credit in GENE 4960.
Prerequisite: GENE(BIOL) 3200 and permission of Honors.
Individual study, reading, or research projects under the direction of a faculty member.
Non-traditional format: Directed study.

GENE 4970H. Directed Readings and/or Projects (Honors). 4 hours.
Prerequisite: GENE 4960H and permission of Honors.
Individual study, reading, or research projects under the direction of a faculty member.
Non-traditional format: Directed study.

GENE 4980H. Directed Readings and/or Projects (Honors). 4 hours.
Prerequisite: GENE 4970H and permission of Honors.
Individual study, reading, or research projects under the direction of a faculty member.
Non-traditional format: Directed study.

GENE 4990H. Honors Thesis. 3 hours.
Prerequisite: GENE 4970H and permission of Honors.
Thesis describing research performed in faculty laboratory.
Non-traditional format: Directed study.

(GEOG) Geography

College of Arts and Sciences, Department of Geography

GEOG 1101. Introduction to Human Geography. 3 hours.
Not open to students with credit in GEOG 2010H-2010D.
Global patterns of resources, population, culture, and economic systems. Factors contributing to these patterns and distinctions between the technologically advanced and less advanced regions of the world.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

GEOG 1103. Cultural Geography of the United States. 3 hours.
Not open to students with credit in GEOG 2130H-2130D.
Geographic factors underlying multiculturalism and ethnic relationships in the United States. Spatial development and organization of culture; population growth, migration, and urbanization; and the spatial dimensions of political, economic, and social processes.

GEOG 1111. Introduction to Physical Geography. 3 hours.
Not open to students with credit in GEOG 1112 or GEOG 1113 or GEOG 2110H.
Spatial patterns and underlying processes of the physical environment and biosphere, including climate, vegetation, soils, landforms, and water resources.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

GEOG 1111L. Introduction to Physical Geography Laboratory. 1 hour. 2 hours lab per week.
Not open to students with credit in GEOG 1112L or GEOG 1113L or GEOG 2110L.
Prerequisite or corequisite: GEOG 1111.
Optional laboratory for Introduction to Physical Geography.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

GEOG 1112. Introduction to Weather and Climate. 3 hours.
Atmospheric composition and structure, clouds, precipitation, and atmospheric motion and winds. Organized weather systems, including air masses, fronts, and severe weather. Discussion of global climates includes circulation, wind systems, climate classification, and climate change.

GEOG 1112L. Introduction to Weather and Climate Laboratory. 1 hour. 2 hours lab per week.
Prerequisite or corequisite: GEOG 1112.
Optional laboratory for Introduction to Weather and Climate.

GEOG 1113. Introduction to Landforms. 3 hours.
Analysis and classification of major types of land surfaces, stressing geographic characteristics. Interpretation of relationships between landforms and other phenomena through maps, air photos, and field observations. World coverage with emphasis on North America.

GEOG 1113L. Introduction to Landforms Laboratory. 1 hour. 2 hours lab per week.
Prerequisite or corequisite: GEOG 1113.
Optional laboratory for Introduction to Landforms.

GEOG 1125. Resources, Society, and the Environment. 3 hours.
Not open to students with credit in GEOG 2250H-2250D.
Interactions between physical systems and human activities, and their effects on environmental quality and sustainability. Geography of population and resource consumption, food production, water and air quality, energy policy, land/biotic resource management.

GEOG 2010H-2010D. Introduction to Human Geography (Honors). 3 hours. 2 hours lecture and 1 hour discussion per week.
Not open to students with credit in GEOG 1101.
Prerequisite: Permission of Honors.
Global patterns of resources, population, culture, and economic systems. Factors contributing to these patterns and distinctions between the technologically advanced and less advanced regions of the world.

(GEOG)AFST(ANTH)(CMLT)(HIST)(SOCI) 2100. Introduction to Africa. 3 hours.
The history, physical environment (landforms,

vegetation, and climate), and sociocultural environment (artistic, political, and social development) of Africa.

GEOG 2110L. Introduction to Physical Geography Laboratory (Honors). 1 hour. 2 hours lab per week.
Not open to students with credit in GEOG 1111L or GEOG 1112L or GEOG 1113L.
Prerequisite or corequisite: GEOG 2110H.
Optional laboratory for Introduction to Physical Geography (Honors).

GEOG 2110H. Introduction to Physical Geography (Honors). 3 hours.
Not open to students with credit in GEOG 1111 or GEOG 1112 or GEOG 1113.
Prerequisite: Permission of Honors.
Spatial patterns and underlying processes of the physical environment and biosphere, including climate, vegetation, soils, landforms, and water resources.

GEOG 2130H-2130D. Cultural Geography of the United States (Honors). 3 hours. 2 hours lecture and 1 hour discussion per week.
Not open to students with credit in GEOG 1103.
Prerequisite: Permission of Honors.
Geographic factors underlying multiculturalism and ethnic relationships in the United States. Spatial development and organization of culture; population growth, migration, and urbanization; and the spatial dimensions of political, economic, and social processes.

GEOG 2250H-2250D. Resources, Society, and the Environment (Honors). 3 hours. 2 hours lecture and 1 hour discussion per week.
Not open to students with credit in GEOG 1125.
Prerequisite: Permission of Honors.
Interactions between physical systems and human activities and their effects on environmental quality and sustainability. Geography of population and resource consumption, food production, water and air quality, energy policy, land/biotic resource management.

GEOG 2300. Geographic Data Analysis. 3 hours.
Methods and techniques required at various stages of geographic data analysis, including the collection, manipulation, description, presentation, analysis, and interpretation of data. Exercises using statistical and GIS software packages on microcomputers integrate data analysis with geographic information systems.

GEOG 2610. Geography of Georgia. 3 hours.
Physical, cultural, economic, historical, and biological landscapes of Georgia, explored through videos, music, and computerized data sets, such as the Interactive Atlas of Georgia and the Georgia 100 GIS.

GEOG 2800. Geography of Food Commodities. 3 hours.
An introduction to the political, economic, and social origins and implications of several Western food commodities, with a focus on breakfast (e.g., coffee, milk, eggs, and peaches). The course focuses on how natural and human resources are organized and regulated along food commodity chains.

GEOG 3010. General Geomorphology. 3 hours.
Prerequisite: (GEOG 1111 and GEOG 1111L) or (GEOG 1113 and GEOG 1113L) or (GEOG 2110H and GEOG 2110L) or GEOL 1250- 1250D.
Earth surface processes and landforms, including tectonic, volcanic, weathering, soil, hillslope, karst, fluvial, glacial, periglacial, eolian, and coastal geomorphic systems. Relevance to environmental change is stressed. Field trip required.

GEOG 3110. Climatology. 3 hours.
Prerequisite: (GEOG 1111 and GEOG 1111L) or (GEOG 1112 and GEOG 1112L) or (GEOG 2110H and GEOG 2110L).
Climatology from local to global scales. Topics include radiation/heat exchanges, the hydrologic cycle, global climate patterns, climate change, measurement and data sources, relationships of climate with ecosystem processes and human activities, climate forecasting and use of the Internet.

GEOG 3120-3120L. Weather Analysis and Forecasting. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: GEOG 1112 and GEOG 1112L.
The collection, display, and application of weather data. The use of meteorological instruments, codes, maps, atmospheric soundings, and thermodynamics diagrams. Interpretation of weather maps using basic meteorological principles.

GEOG 3210. Biogeography. 3 hours.
Prerequisite: (GEOG 1111 and GEOG 1111L) or (GEOG 1112 and GEOG 1112L) or (GEOG 2110H and GEOG 2110L).
Factors affecting plant and animal distributions at scales from organisms to biomes. Influence of ecological factors and human activity on distributions, historical biogeography, and patterns of earth's biomes.

GEOG 3290. Introduction to Mountain Geoecology. 3 hours.
An analysis of the principles of mountain geoecology provides a review of many aspects of mountain studies affecting today's society. Geographical implications of high altitude biology, water catchment and distribution, highland ethnoecology and biogeography of montane biota will serve to locate the role of humans in mountain ecosystems.

GEOG 3510-3510L. Cartography and Graphics. 3 hours. 2 hours lecture and 2 hours lab per week.
Map design techniques including cartographic theory and principles, map interpretation, map database preparation, compilation, symbolization, computer mapping, map reproduction techniques, color, and thematic map design.

GEOG 3620. Introduction to Economic Geography. 3 hours.
Prerequisite: GEOG 1101 or ECON 2105.
Location factors and principles utilizing theoretical and empirical studies. Focus upon the spatial organization of economic production, consumption, and exchange systems.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

GEOG 3630. Introduction to Urban Geography. 3 hours.
Prerequisite: GEOG 1101.
Theories of inter- and intraurban locations. Procedures in geographical analysis of agglomerated settlements, including demographic, economic, and social attributes.

GEOG 3640. The Geography of Human Rights. 3 hours.
An examination of how, where, and under what specific conditions violations of human rights occur. Students will review local and global mechanisms for addressing human rights violations, and evaluate how international law, national policies, and local practices are mutually constituted. Contemporary theoretical debates regarding violence and power, memory and history, and the dilemmas of democratic transitions will be critiqued.

GEOG 3990. Internship in Geography. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Placement of students in an outside private or governmental agency where they will utilize geographic techniques in approaching practical problems relevant to the agency's mission. An initial orientation and a postinternship evaluation with the internship committee are required.
Non-traditional format: Internship.

GEOG 4020/6020. Fluvial Geomorphology. 3 hours.
Prerequisite: GEOG 1111 or GEOG 1113 or permission of department
Landforming effects of surface-water movement with emphasis on surface-water hydrology, streamflow mechanics, floods, sediment transport and storage, and landform evolution. Field trips included.

GEOG 4030/6030. Geomorphology and Environmental Change in Karst and Arid Environments. 3 hours.
Prerequisite: GEOG 1113 or permission of department.
Weathering, erosional and depositional processes, and landforms in karst and arid areas. Formation of sinkholes, sinking streams, caves, springs, sand dunes, playas, and yardangs. Geoarchaeological and other evidence on the nature of past environments, including dating cave and aeolian sediments. Field trips included.

GEOG 4040/6040. Global Environmental Change During the Quaternary. 3 hours.
Prerequisite: GEOG 3010 or permission of department.
Chronology and geomorphic, isotopic, and palynological evidence of Quaternary paleoclimates. The effects of past climatic changes upon present landscapes, historic short-term fluctuations in temperature and precipitation, and possible explanations for climatic change are emphasized.

GEOG 4060/6060. Field and Laboratory Methods in Physical Geography. 3 hours.
Prerequisite: GEOG 3010 or GEOG 3110 or GEOG 3210 or permission of department.
Methods in measurement, observation, recording and synthesis of field data in physical geography. Students conduct field research and present oral and written reports (with maps) of findings.

(GEOG)ENGR 4111/6111-4111L/6111L. Atmospheric Thermodynamics. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: MATH 2500 and PHYS 1212-1212L.
Prerequisite or corequisite: MATH 2700 and (CHEM 1211 or CHEM 1311H or CHEM 1411) and (CSCI 1301-1301L or ENGR 1140).
An introduction to atmospheric thermodynamics with emphasis on the first and second laws of thermodynamics, equation of state for gases, moisture variables, adiabatic and diabatic processes of dry and moist air, phase changes of water, and atmospheric statics.

GEOG(ENGR) 4112/6112. Atmospheric Dynamics. 3 hours.
Prerequisite: (GEOG 1112 and GEOG 1112L and MATH 2200) or permission of department.
A quantitative investigation of large-scale atmospheric motion. Equations of motion are derived from basic physical laws. Concepts of vorticity, quasi-geostrophic theory, and general circulation are addressed.

GEOG 4120/6120. Synoptic Meteorology/Climatology. 3 hours.
Prerequisite: GEOG 3120-3120L or permission of department.

Theory and observations to understand mid-latitude weather systems. Focus is on application of quasi-geostrophic theory in weather forecasting. Analysis and interpretation of weather maps and numerical models. Development and life cycle of cyclones, fronts, and jet streams.

GEOG 4140/6140. Satellite Meteorology/Climatology. 3 hours.
Prerequisite: (GEOG 1111 and GEOG 1111L) or (GEOG 1112 and GEOG 1112L) or (GEOG 2110H and GEOG 2110L) or permission of department.
Application of satellite remote sensing in meteorology and climatology. Applications include clouds, atmospheric water vapor and precipitation, the Earth's radiation budget, sea and land surface temperatures.

GEOG 4150/6150. Physical Climatology. 3 hours.
Prerequisite: GEOG 3110 or GEOG 3120-3120L or GEOG 4140/6140 or GEOG 4160/6160 or ENGR(GEOG) 4161/6161-4161L/6161L or GEOG(ENGR) 4112/6112 or permission of department.
Advanced, quantitative study of Earth's physical climate. Includes global energy balance, surface-atmosphere energy exchanges, surface hydrology and water budget at various temporal and spatial scales. Methods of measuring and modeling are discussed. Case studies are used to illustrate how the physical processes govern the climate system.

GEOG 4160/6160. Applied Climatology. 3 hours.
Prerequisite: GEOG 3110 or permission of department.
The interaction of climate with organisms, communities, and ecosystems. Mechanisms of heat flow, radiation exchanges and water vapor flux; statistical methods used with climatic data; bioclimatic methods used to improve environmental impact assessment; and case studies that demonstrate the role of climate in ecosystem function.

(GEOG)ENGR 4161/6161-4161L/6161L. Environmental Microclimatology. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: MATH 2200 and (PHYS 1111-1111L or PHYS 1211-1211L) and [(BIOL 1103 and BIOL 1103L) or (BIOL 1104 and BIOL 1104L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L) or (BTNY 1220 and BTNY 1220L)].
An introduction to the interactions between the biosphere and atmosphere. Energy, moisture, and carbon exchange in the soil-plant-atmosphere continuum with applications to managed and natural environments. The impact of weather and climate on humans and domesticated animals.

(GEOG)ENGR 4180/6180. Special Topics in Atmospheric Sciences. 3 hours.
Prerequisite: Permission of department.
Special interest topics in atmospheric sciences.

GEOG(BTNY) 4220/6220. Ecological Biogeography. 3 hours.
Prerequisite: GEOG 1111 or ECOL(BIOL) 3500-3500L or permission of department.
Patterns of plant distribution in contemporary landscapes and underlying processes, including vegetation dynamics, disturbance ecology, biogeomorphology, dendrochronology, and environmental history.

GEOG(BTNY) 4240/6240. Plant Geography. 3 hours.
Prerequisite: GEOG 3210 or ECOL(BIOL) 3500-3500L or permission of department.
Biogeography and ecology of the world's main terrestrial biomes. Includes world bioclimatic zonation, plant-geographic processes, other physical environmental factors, plant functional roles and types, vegetation dynamics, response to disturbance, and potential natural vegetation. Emphasis on global scale, with secondary emphasis on North America.

(GEOG) (ANTH) (BIOL) (BTNY) ECOL (ENTO) (FORS) (GEOL) (PATH) 4261. Museum of Natural History Internship. 3 hours. Repeatable for maximum 6 hours credit. 7 hours lab per week.
Prerequisite: Permission of instructor and permission of Museum of Natural History.
Supervised work experience with a natural history collection. Students will learn techniques and other procedures for curating materials in a collection of their choice under the direction of collection personnel.
Non-traditional format: Students will maintain regular, weekly work schedules totaling 7 hours per week under the supervision of faculty and other collection personnel associated with the Museum of Natural History.

GEOG 4290/6290. Neotropical Mountain Geoecology. 6 hours. 3 hours lecture and 6 hours lab per week.
Not open to students with credit in CRSS(ANTH)(ECOL)(GEOG)(HORT) 4930/6930.
Prerequisite: GEOG 3290.
Study of how the mountain ecological principles apply in a geographical setting in tropical America. Review of geological, edaphic, hydrological, biogeographical, ethnographical, and ecological processes in the shaping of mountain cultures in tropical America, with case studies in Ecuador. This course will be taught as a practicum in Quito, Ecuador with collaboration of the Pan American Center for Geographical Studies and Research for travel in Ecuador.

GEOG 4300/6300. Introductory Spatial Analysis. 3 hours.

Prerequisite: GEOG 2300 or permission of department.

Descriptive and inferential techniques used in quantitative geographic analysis. Probability distributions, sampling techniques, parametric and nonparametric inference, analysis of variance, spatial autocorrelation measures and regression procedures. Applications of statistical methods to spatial analysis and geographic research design. Exercises develop knowledge of statistical programming with computer software.

GEOG 4305/6305. Introduction to Qualitative Research Methods. 3 hours.

An introduction to qualitative research problems in geography and to the major modes of qualitative data collection, analysis, and representation. Students will gain practical experience with interviews, focus groups, archival research, and observation techniques.

GEOG 4310/6310-4310L/6310L. Cartographic Design and Reproduction. 3 hours. 2 hours lecture and 2 hours lab per week.

Prerequisite: GEOG 3510-3510L or permission of department.

Design, examination of cartographic literature, map production methods, and their effects on design. Practical applications of desktop publishing, page layout with specific emphasis on state atlas design, map-narrative interactions, four color map reproduction, and photo-cartographic techniques.

GEOG 4330/6330-4330L/6330L. The Use and Interpretation of Aerial Photographs. 3 hours. 2 hours lecture and 2 hours lab per week.

Prerequisite: Permission of department.

Principles and techniques of extracting descriptive and metric information about the environment from aerial photographs acquired in analog and digital forms. Applications emphasize planimetric mapping and interpretation of physical and cultural landscapes. A term project using the techniques is required.

GEOG 4350/6350-4350L/6350L. Remote Sensing of Environment. 3 hours. 2 hours lecture and 2 hours lab per week.

Prerequisite: GEOG 4330/6330-4330L/6330L or permission of department.

Remote sensing with emphasis on aerospace applications in the natural sciences. Fundamental properties of the electromagnetic spectrum and remote sensing devices such as multispectral cameras, thermal infrared line scanners, and television and radar imaging systems.

GEOG 4370/6370-4370L/6370L. Introduction to Geographic Information Systems. 3 hours. 2 hours lecture and 2 hours lab per week.

Prerequisite: CSCI 1301-1301L or sophomore standing or permission of department.

Principles and applications of geographic information systems (GIS). Examines the nature and accuracy of spatially referenced data, as well as methods of data capture, storage, retrieval, visualization, modeling, and output using one or more GIS software packages.

GEOG(CRSS) 4375/6375. GIS Applications in Agriculture. 4 hours.

Prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or ENGR 1120 or GEOG 4330/6330-4330L/6330L or GEOG 4370/6370-4370L/6370L.

An exploration of the uses of Geographic Information Science (GIS) technology in agricultural applications. Basics of Global Positioning Systems (GPS) for location reference, GIS for field investigation, and remote sensing for crop and soil evaluation will be explored. Construction of GIS databases for precision farming and watershed management applications will be required.

GEOG 4410/6410-4410L/6410L. Cartographic Visualization Methods. 3 hours. 2 hours lecture and 2 hours lab per week.

Prerequisite: GEOG 3510-3510L or permission of department.

Theory and application of computer technology in the preparation of thematic maps and graphics. Emphasis on the creation, analysis, and display of statistical surfaces. Students explore trends in cartographic visualization methods, including interactive and animated mapping techniques.

GEOG 4430/6430-4430L/6430L. Advanced Photogrammetry. 3 hours. 2 hours lecture and 2 hours lab per week.

Prerequisite: GEOG 4330/6330-4330L/6330L or permission of department.

Theories of analytical and digital (soft copy) photogrammetry as applied to topographic mapping. Topics include refinement of photographic measurements, coordinate transformations, stereoscopic parallax, collinearity equations, aerial triangulation, orthophotography, and digital image correlation.

GEOG 4470/6470-4470L/6470L. Geographic Analysis and Geographic Information Systems. 3 hours. 2 hours lecture and 2 hours lab per week.

Prerequisite: (GEOG 4300/6300 and GEOG 4370/6370-4370/6370L and CSCI 1302) or permission of department.

Geographic analytical methods and implementation. Theory and concepts of spatial analysis. Description, reduction, and comparison of point, line, area, and volumetric geographic data sets. Implementation and limitation of geographic information systems.

GEOG 4610/6610. Location Analysis. 3 hours.
Prerequisite: GEOG 3620 or permission of department.
The geography of retail activity and consumer demand. Principles of locational decision-making for retail and service firms.

GEOG 4620/6620. Advanced Economic Geography. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GEOG 3620 or permission of department.
Advanced theoretical and empirical issues in economic geography, such as impacts of globalization, regional development, trade patterns, and labor issues. Topics will vary.

GEOG 4630/6630. Advanced Urban Geography. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GEOG 3630 or permission of department.
Urban growth and approaches to urban analysis. Urbanization processes within urban systems, including economic, demographic, social, and technological change.

GEOG 4640/6640. Population Geography. 3 hours.
Prerequisite: GEOG 1101 or or permission of department.
The distribution of world population and an introduction to population data and to basic demographic techniques. Topics include theories of population change, fertility, mortality, migration, population policy, and population-environment relationships.

GEOG 4650/6650. Industrial Geography. 3 hours.
Prerequisite: GEOG 3620 or permission of department.
The regional basis of economic growth and industry case studies. The impact of product and process innovation, entrepreneurship, globalization, and the service economy on the spatial distribution of industry.

GEOG 4660/6660. Urban and Regional Development. 3 hours.
Prerequisite: GEOG 1101 or permission of department.
Regional development and the implications of globalization to regional economies of the industrialized countries. Discussions on the changing dynamics of international competition and the reorganization of production. Contemporary trends in regional economic development policy, including high technology and service-sector development.

GEOG 4670/6670. Geography of Development. 3 hours.
Prerequisite: GEOG 1101 or permission of department.
Geographical aspects of Third World development, including population growth, migration, industrialization, trade, and foreign aid. The spatial characteristics of economic development are viewed at the conceptual level and implications for policy discussed.

GEOG 4680/6680. Gender and Geography. 3 hours.
Prerequisite: GEOG 1101 or WMST 1110-1110D or permission of department.
Relationships between gender and globalization. Women and development, industrialization, and third world regions.

GEOG 4710/6710. Geography of Sub-Saharan Africa. 3 hours.
Prerequisite: GEOG 1101 or permission of department.
Geographic and socio-economic issues that face sub-Saharan economies into the twenty-first century. Emphasis on the physical landscape, environmental conditions, social and cultural distributions, and strategies and theories of economic development.

GEOG 4720/6720. Geography of Latin America. 3 hours.
Prerequisite: GEOG 1101 or permission of department.
The geography of Latin America, including physical, cultural, and economic characteristics of different regions. Prospects for expansion of settlement, development of resources, and growth of industries.

GEOG 4730/6730. Geography of China. 3 hours.
Prerequisite: GEOG 1101 or permission of department.
The physical and human geography of contemporary China. Emphasis is on modernization and development of agriculture, industry, and transportation within the context of China's resource base and large population.

GEOG 4740/6740. Geography of East and Southeast Asia. 3 hours.
Prerequisite: GEOG 1101 or permission of department.
The physical and human geography of East and Southeast Asia. Major focus on resources, land utilization, population characteristics and distributions as they relate to economic and political problems. Emphasis is on Japan, Korea, Indonesia, Philippines, and Indo-China.

GEOG 4750/6750. Geography of Europe. 3 hours.
Undergraduate prerequisite: GEOG 1101 or permission of department.
Geographic issues that affect Europe into the twenty-first century. Emphasis on current economic, social, and political controversies in Europe, as well as the historical context for these.

GEOG 4810/6810. Conservation Ecology and Resource Management. 3 hours.
Prerequisite: GEOG 1125 or GEOG 2250H-2250D or permission of department.
Ecological and economic analysis of human use of global and regional resources, emphasizing ecological requirements, sustainable use, and holistic decision-making. Topics include ecosystem dynamics, functional biodiversity, landscape management, socioeconomic traps, global change, and ecological restoration.

GEOG 4920/6920. Special Problems in Area Analysis. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent research and readings on geographical topics by arrangement with specific faculty.
Non-traditional format: Class hours are by arrangement with the relevant faculty and vary depending on credit hours.

(GEOG)(ANTH)CRSS(ECOL)(HORT) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Prerequisite: Permission of department.
Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

(GEOG)(ANTH)CRSS(ECOL)(HORT) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3 hours. Repeatable for maximum 9 hours credit. 48 hours lab per week.
Not open to students with credit in CRSS (ANTH)HORT 4940/6940.
Prerequisite: CRSS (ANTH)(ECOL)(GEOG)(HORT) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.
Non-traditional format: Students will tour a tropical country and receive on-site instruction at a series of different farms and ecological preserves over a period of 18 days.

GEOG 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director for senior Honors students.
Non-traditional format: Directed study.

GEOG 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director for senior Honors students.
Non-traditional format: Directed study.

GEOG 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major or related field for a senior Honors student.
Non-traditional format: Directed study.

(GEOL) Geology

College of Arts and Sciences, Department of Geology

GEOL 1121. Earth Processes and Environments. 3 hours.
Not open to students with credit in GEOL 1121H or GEOL 1250-1250L or GEOL 2350H.
Earth processes and utilization of geological materials (plate tectonics, earthquakes, volcanism, hydrology, erosion). Earth hazards, pollution, and energy resources in the context of environmental geology.

GEOL 1121L. Earth Processes and Environments Laboratory. 1 hour. 2 hours lab per week.
Not open to students with credit in GEOL 1250-1250L or GEOL 2350H.
Prerequisite or corequisite: GEOL 1121 or GEOL 1121H.
Corequisite: None.
Description and identification of minerals and rocks. Interpretation of topographic and geological maps. Identification and interpretation of surficial and structural geologic features. Quantitative evaluation of hydrologic and environmental problems.

GEOL 1121H. Earth Processes and Environments (Honors). 3 hours.
Not open to students with credit in GEOL 1121 or GEOL 1250-1250L or GEOL 2350H.
Prerequisite: Permission of Honors.
Earth processes and utilization of geological materials (plate tectonics, earthquakes, volcanism, hydrology, erosion). Earth hazards, pollution, and energy resources in the context of environmental geology.

GEOL 1122. Earth's History of Global Change. 3 hours.
Not open to students with credit in GEOL 1122H or GEOL 1260-1260L or GEOL 2360H.
Geologic record of global change, including measurement of geologic time, global geochemical cycles, sea-level and climate change, biodiversity, evolution, ecological changes and extinctions.

GEOL 1122L. Earth's History of Global Change Laboratory. 1 hour. 2 hours lab per week.
Not open to students with credit in GEOL 1260-1260L or GEOL 2360H.
Corequisite: GEOL 1122 or GEOL 1122H.
Description, identification, and interpretation of sedimentary structures and the fossil remains of organisms. The physical evidence of evolution and climatic change throughout geologic time. Interpretation of geologic features and processes.

GEOL 1122H. Earth's History of Global Change (Honors). 3 hours.
Not open to students with credit in GEOL 1122 or GEOL 2360H or GEOL 1260-1260L.
Prerequisite: Permission of Honors.
Geologic record of global change, including geologic time, global geochemical cycles, sea-level and climate change, biodiversity, evolution, ecological changes and extinction.

GEOL 1250-1250L. Physical Geology. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in GEOL 1121 or GEOL 2350H.
Physical geology; characteristics and origins of rocks and minerals; mechanism and processes of volcanism, plutonism, metamorphism, weathering, erosion, sedimentation, and lithification; evolution of landforms. Tectonic processes of continental drift, sea-floor spreading, and plate tectonics. Emphasis on scientific methods.

GEOL 1260-1260L. Historical Geology. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in GEOL 1122 or GEOL 1122H or GEOL 2360H.
Prerequisite or corequisite: GEOL 1121 or GEOL 1121H or GEOL 1250-1250L.
Methods and concepts by which Earth history is interpreted. The geologic time scale; interactions of physical, chemical, and biological processes through time. Origin of life; evolution and distribution of plants and animals through time. Geologic history of North America. Emphasis on interpretation of the rock record.

(GEOL)HONS(BIOL)(CHEM)(PHYS) 2070H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in PHYS 1010 or CHEM 1110.
Prerequisite: (ENGL 1101 or MATH 1101) and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Occasional weekend field trips required.

(GEOL)HONS(BIOL)(CHEM)(PHYS) 2080H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in BTNY 1220 or BTNY 1220L or GEOL 1121.
Prerequisite: HONS(BIOL)(CHEM) (GEOL) (PHYS) 2070H and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Weekend field trips required.

GEOL 2120. Introduction to Environmental Geology. 3 hours. 2 hours lecture and 1 hour lab per week.
Prerequisite: (GEOL 1121 and GEOL 1121L) or GEOL 1250-1250L.
Environmental geology focusing on understanding global and current environmental problems and their relationships with geological processes. Emphasis on case histories of geologic hazards and environmental impact of resources extraction and use. Requirements for a sustainable society analyzed.
Non-traditional format: During discussion period students will discuss readings, discuss environmental situations and their solution, and give presentations on subjects they have researched. Emphasis is on research, analysis, and problem solving.

GEOL 2350H. Physical Geology (Honors). 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in GEOL 1121 or GEOL 1121H or GEOL 1250-1250L.
Prerequisite: Permission of Honors.
Characteristics and origins of minerals and rocks. Plate tectonics and structure of the Earth's interior. Geologic processes that affect the Earth's surface: volcanism, earthquakes, coastal erosion, and global climate changes. Natural Earth resources and human interaction.
Non-traditional format: During Summer semester this course will be taught in the field as part of the Geology, Anthropology Summer Field Program. Extensive field observations and projects will be included in addition to organized lecture and laboratory work.

GEOL 2360H. Historical Geology (Honors). 4 hours. 3 hours lecture and 2 hours lab per week. Not open to students with credit in GEOL 1260-1260L.
Prerequisite: GEOL 2350H and Permission of Honors.
Measurement of geologic time. Physical and biological history of Earth as recorded in rocks and fossils. Development of the major features of the Earth, with particular emphasis on North America.
Non-traditional format: Course taught during summer session in the field. Traditional methods are combined with field exercises and problems, interpretive exercises, and extensive field discussions.

GEOL 3010-3010L. Earth Materials. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: CHEM 1211 and CHEM 1211L.
Physical and chemical properties, identification, and modes of occurrence of minerals and mineral assemblages. Mineral crystallography, determinations of optical properties with the petrographic microscope, x-ray diffraction and structural formula determinations. Introduction to mineral thermodynamic phase relations.

GEOL 3020-3020L. Surficial and Near-Surficial Processes. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: (GEOL 1121 and GEOL 1121L and GEOL 1122 and GEOL 1122L) or GEOL 1260-1260L.
Surface processes; geohydrological, geochemical cycles; and surface geological structures of the Earth.
Non-traditional format: Field Trips Required

GEOL 3030. Elementary Oceanography. 3 hours.
Basic aspects of oceanography: ocean basins and plate tectonics, shallow and deep ocean circulation, waves and tides, marine biology and ecology, marine sediments, chemistry of seawater, paleoceanography, and environmental oceanography.

(GEOL)HONS 3070H. Honors Research Methods. 1-3 hours.
Prerequisite: Permission of Honors.
Research methods in the natural sciences to enhance directed study participation and Honors thesis/project preparation.
Non-traditional format: Weekly seminars focus on individual student research designs. May be held as daily seminars during the May session.

GEOL 3090. Gems and Gem Materials. 3 hours.
Gem materials, historical, cultural, mineralogical, technological, and scientific aspects. The identification and evaluation of gems.

GEOL 3120-3120L. Geological Hazards. 3 hours. 2 hours lecture and 2 hours lab per week.
Consequences of potentially hazardous geologic processes, including volcanic activity, earthquakes, landslides, flooding, shoreline erosion, and ground failure. Emphasis on developing understanding of the underlying geologic processes that result in hazards and delineating risk potential. Evaluation of methods of prediction and methods of damage control through laboratory analysis of case studies.

GEOL 3130. Geology of the National Parks. 3 hours.
Prerequisite: (GEOL 1121 and GEOL 1121L) or GEOL 1250-1250L or permission of department.
Geological features of selected national parks used as type examples for understanding rock forming processes (igneous, sedimentary, and metamorphic) and orogenic processes. Exploitation of mineral resources in and around national parks and conflicts that ensue.

GEOL 3140-3140L. Geology and Exploration of the Moon. 3 hours. 2 hours lecture and 2 hours lab per week.
The geological evolution of the Moon and implications for early Earth history. Emphasis on processes which have shaped the Moon and geological techniques used in lunar investigation. Terrestrial analogs are examined and compared with lunar features. Lunar exploration is reviewed and results are examined; their implications for lunar evolution evaluated.

GEOL 3150. Coastal Processes and Conservation. 3 hours. 2 hours lecture and 2 hours lab per week.
The major physical and biological processes which characterize marine coastal habitats. Emphasis is on developing an understanding of the complex interdependency within various environments, and evaluating the responses to natural and human-induced disturbances. Discussion of stabilization vs. conservation issues and environmental effects of private and governmental attempts at risk mitigation.

GEOL 3200. Rocks and Minerals. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: [(GEOL 1121 and 1121L) or GEOL 1250-1250L] and CHEM 1211 and CHEM 1211L.
Basic properties, origins, and methods of describing and classifying the common minerals and rocks. Emphasis on identifying and describing samples on the hand specimen and outcrop scale.
Non-traditional format: Field trips required.

GEOL 3220. Water Issues in Georgia. 3 hours.
An examination of the important water-related issues in Georgia, how scientific principles and practices can be employed to understand their

causes and affect their solutions, and a detailed discussion of issues in various regions of the state. Non-traditional format: One or more one-day field trips on weekends may be required.

GEOL 3250. Earth Resources and the Environment. 3 hours.
Distribution of mineral and energy resources; present and future problems of mineral supply; conservation of minerals; mineral resources in relation to national and international policy; environmental impact of mineral/energy resource extraction and use.

GEOL 3300. Paleobiotas. 3 hours.
The earth's major biotas throughout geologic history. Emphasis on paleoecology, paleoenvironmental change, and mass extinction events.

GEOL 3350. Dinosaurs - Lifestyles of the Big and Famous in the Mesozoic. 3 hours.
Dinosaur dinners, dates, dallying, and domiciles (or dinosaur habitats and eating, reproductive, and social behavior). Warm-bloodedness versus cold-bloodedness. Relationship to birds, reptiles, and mammals. Evolutionary patterns. Extinction and asteroids. Climate, sea level, and continents during the Mesozoic Era.

GEOL 4010-4010L. Life, Environment, and Ecologies of the Past. 4 hours. 2 hours lecture and 6 hours lab per week.
Prerequisite: (GEOL 1122 and GEOL 1122L) or GEOL 1260-1260L or GEOL 1122H.
Prerequisite or corequisite: GEOL 3010-3010L.
Principles of paleobiology and stratigraphy, including sedimentary structures, facies models, sequence stratigraphy, biostratigraphy, paleoecology, taphonomy, and macroevolutionary dynamics.

GEOL 4020-4020L. Internal Earth Processes. 4 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: GEOL 3010-3010L.
Internal processes which are responsible for the formation and deformation of the earth. Study of the basic tools of igneous and metamorphic petrology, structural geology, and geophysics and their application in field and laboratory investigations.

GEOL 4050/6050. Facies Models and Stratigraphy. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GEOL 4010-4010L.
Sedimentary processes in major siliciclastic and carbonate depositional environments. Factors affecting deposition and erosion of sediments on time scales of hundreds of years to hundreds of thousands of years.

GEOL 4060/6060. Structural Geology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: GEOL 3010-3010L.
Stress and strain within the earth, and the mechanical properties and behavior of earth materials. Geologic structures, their recognition and interpretation in the field, and solution of structural problems. Framework of the earth's crust; evolution of mountain belts, continents, and basins. Relation between structures, deformation, and plate tectonics.

(GEOL)HONS 4070H. Special Problems Seminar in the Natural Sciences. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the natural sciences which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

(GEOL)HONS 4080H. Special Problems Seminar in Natural Sciences. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the natural sciences which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

GEOL 4090/6090. Marine Geology. 3 hours.
Prerequisite: [(GEOL 1121 and GEOL 1121L) and (GEOL 1122 and GEOL 1122L)] or GEOL 1260-1260L.
The geologic aspects of ocean basins, including morphology, sedimentation processes, and mode of origin.

GEOL 4110/6110. Principles of Geochemistry. 3 hours.
Prerequisite: (CHEM 1212 and CHEM 1212L and GEOL 3010-3010L) or permission of department.
Distribution of elements and isotopes in minerals, rocks, and waters. Principles governing the migration and behavior of elements and isotopes.

GEOL 4220/6220. Hydrogeology. 3 hours.
Groundwater in the hydrologic cycle. Examination of flow through porous media, regional flow, influence of wells, water chemistry, and contaminant transport. Emphasis on practical environmental problems.

GEOL 4250/6250. Field Methods in Geology. 2 hours. 1 hour lecture and 3 hours lab per week.
Prerequisite: GEOL 3010-3010L.
Prerequisite or corequisite: GEOL 3020-3020L.
Field measurement of geologic parameters, accurate recording of observations, production and interpretation of geologic maps and cross sections, and the recognition of structures and lithologies in the field.
Non-traditional format: Two day weekend field trips are required.

(GEOL) (ANTH) (BIOL) (BTNY) ECOL (ENTO) (FORS) (GEOG) (PATH) 4261. Museum of Natural History Internship. 3 hours. Repeatable for maximum 6 hours credit. 7 hours lab per week.
Prerequisite: Permission of instructor and permission of Museum of Natural History.
Supervised work experience with a natural history collection. Students will learn techniques and other procedures for curating materials in a collection of their choice under the direction of collection personnel.
Non-traditional format: Students will maintain regular, weekly work schedules totaling 7 hours per week under the supervision of faculty and other collection personnel associated with the Museum of Natural History.

GEOL 4270/6270. Geology Field School. 6 hours.
Prerequisite: GEOL 3020-3020L or GEOL 4010-4010L or GEOL 4020-4020L or GEOL 4250/6250.
Theory and practice of field measurement, large scale planimetric and topographic mapping, and grid surveying. Graphic presentation of field data. Geologic mapping projects, including interpretation of observed geologic features. Summary maps and reports must be prepared and defended in the field. Student must demonstrate mastery of the knowledge and skills taught in the required on-campus major courses.
Non-traditional format: Taught in the field during the summer term. Instructional methods include lectures, demonstrations, field trips, as well as supervised field study.

GEOL 4300/6300. Igneous and Metamorphic Petrology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: GEOL 4020-4020L.
Textures, mineralogy, and classification of the common igneous and metamorphic rocks. Origin of magmas and volcanoes and their impact on civilizations; evolutions of continental and oceanic crusts; metamorphic rocks as probes of crustal processes.

GEOL 4310/6310. Economic Geology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: GEOL 4020-4020L.
Classification and origin of base and precious metal ore deposits; relationships between ore deposits, host rocks, and plate tectonics; principles of ore deposit exploration and evaluation.

GEOL 4330/6330. Geology of North America. 3 hours.
Prerequisite: GEOL 1260-1260L.
Evolution of North American continent through time. Stratigraphic, sedimentary, and magmatic history and tectonic development of various regions since the early Precambrian. Paleontological record of environmental and biological changes. Origin of energy, mineral, soil, and water resources. History of human habitation and resource utilization. Current environmental hazards and challenges.
Non-traditional format: May be taught during summer session in the field as part of the Geology/Anthropology Summer Field Program.

GEOL(ANTH) 4340/6340. Archaeometry. 3 hours.
Prerequisite: GEOL(ANTH) 4700/6700.
Prerequisite or corequisite: GEOL 1121 or GEOL 1121H or GEOL 1122 or GEOL 2350H or ANTH 3220 or ANTH 3250 or ANTH (ECOL) 4210/6210 or CLAS (ANTH) 2000.
Methods of archaeometric analysis including chronometric and instrumental techniques. Absolute age dating and characterization of archaeological materials by physico-chemical analysis.

GEOL 4350/6350. Geology of the Planets and Moons. 3 hours.
Prerequisite: GEOL 3020-3020L and GEOL 4020-4020L.
Geology of the planets, moons, and asteroids, including internal, surficial, and atmospheric processes. Studies in comparative planetology aimed at showing how unique the current life-supporting environment of the Earth is, and why other planets have undergone such dramatically different evolutions.

GEOL 4370/6370. Data Analysis in the Geosciences. 3 hours.
The principles of data analysis, including data collection methods, graphical presentation, and basic statistics.

GEOL 4410/6410. Introduction to Research in Archeogeology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to archeogeology.
Non-traditional format: Taught as a directed study, but traditional lecture and lab exercises may be utilized when appropriate.

GEOL 4420/6420. Introduction to Research in Geochemistry. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to geochemistry.
Non-traditional format: Taught as a directed study, although traditional lecture and lab exercises may be utilized when appropriate.

GEOL 4430/6430. Introduction to Research in Geophysics. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to geophysics.
Non-traditional format: Taught as a directed study but traditional lecture and lab exercises may be utilized when appropriate.

GEOL 4440/6440. Introduction to Research in Hydrogeology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to hydrogeology.
Non-traditional format: Taught as a directed study but traditional lecture and lab exercises may be utilized when appropriate.

GEOL 4450/6450. Introduction to Research in Mineralogy. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to mineralogy.
Non-traditional format: Taught as a directed study, but traditional lecture and lab exercises may be employed when appropriate.

GEOL 4460/6460. Introduction to Research in Paleontology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to paleontology.
Non-traditional format: Taught as a directed study but traditional lecture and lab exercises may be utilized when appropriate.

GEOL 4470/6470. Introduction to Research in Petrology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to petrology.
Non-traditional format: Taught as a directed study, but traditional lecture and lab exercises may be utilized when appropriate.

GEOL 4480/6480. Introduction to Research in Sedimentary Geology. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques appropriate to sedimentation and stratigraphy.
Non-traditional format: Taught as a directed study but traditional lecture and lab exercises may be utilized when appropriate.

GEOL 4490/6490. Introduction to Research in Structure/Tectonics. 1-3 hours. Repeatable for maximum 9 hours credit.
The literature, research procedures, and instrumental techniques applicable to structural geology and/or tectonics.
Non-traditional format: Taught as a directed study but traditional lecture and lab exercises may be utilized when appropriate.

GEOL 4500/6500. Sedimentary Geology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: GEOL 3010-3010L.
Interpretation and origin of sediments and sedimentary rocks, with an emphasis on grain production, sediment transport, diagenesis, facies models, sequence stratigraphy, and sedimentary basins. Emphasis is placed on the analysis of sedimentary rocks in hand sample and thin section, as well as application of course material in solving geological problems.

GEOL 4510/6510. Marine Micropaleontology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: GEOL 4010-4010L.
Geologic history and applications of marine microfossils, especially foraminifera, calcareous nannoplankton, radiolaria, and diatoms.

GEOL 4520/6520. Paleoecology. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: [GEOL 1260-1260L or (GEOL 1122 and GEOL 1122L) or (GEOL 1122H and GEOL 1122L) and GEOL 4010-4010L] or permission of department
The ecological factors affecting the distribution and abundance of fossil organisms, with emphasis on marine invertebrates. Invertebrates as a guide to environments of the past and as indicators of environmental change. Taphonomy of invertebrates.

(GEOL) CRSS4540/6540-4540L/6540L. Pedology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L or permission of department.
Soils as a natural component of the ecosystem, including morphology, landscape distribution, formation, identification of diagnostic horizons and features, and classification.
Non-traditional format: A one-day trip to North Georgia and a two-day trip to the Coastal Plain will be required at student's expense.

GEOL 4550/6550. Clay Mineralogy and Geochemistry. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: GEOL 3010-3010L.
Clay minerals with emphasis on x-ray diffraction analysis and identification of mixed layer systems. Geochemical factors for clay origin and uses including applications to soils, petroleum, archeological, environmental and economic ore deposit studies.

GEOL 4560/6560. Weathering and Diagenesis. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: CHEM 1211 and CHEM 1211L and GEOL 3020-3020L.
Global cycling of major elements. Rock-water interactions. Kinetics of mineral dissolution and growth in soil, marine, freshwater, sedimentary basins and hydrothermal systems. Geochemical models for estimating reaction rates and reservoir capacities/fluxes are considered.

GEOL 4600/6600. Solid Earth Geophysics. 3 hours.
Prerequisite: GEOL 4020-4020L and MATH 2200 and MATH 2200L.
Analysis of Earth's gravity, magnetic, and seismic wave fields applied to the investigation of structure and dynamics of the Earth's interior. Course will cover theory, methods of analysis, and results of geophysical investigations. Emphasis on major new initiatives in satellite geodesy and digital seismic array studies.

GEOL 4620/6620. Exploration Geophysics. 3 hours.
Prerequisite: GEOL 4020-4020L and MATH 2200 and MATH 2200L.
Geophysical methods for imaging the subsurface. Course will focus on gravity, magnetic, resistivity, seismic refraction, and seismic reflection surveys. Applications discussed include exploration for hydrocarbons and characterization of the shallow subsurface for engineering/groundwater studies. Laboratory will include field experiments and computer modeling studies.

GEOL 4640/6640. Geochemical and Geophysical Surveys. 3 hours.
Prerequisite: GEOL 3010-3010L.
Prerequisite or corequisite: GEOL 4020-4020L.
Geochemical dispersion and survey of common pathfinder elements; methods of instrumental analysis used in geochemical exploration. Background theory of gravity, magnetic, electromagnetic, and electrical techniques used in resource exploration. Field based projects.

GEOL 4660/6660. Field School in Shallow Geophysics. 6 hours. 6 hours lecture and 48-56 hours lab per week.
Prerequisite: (GEOL 1121 and GEOL 1121L) or GEOL 1250-1250L or permission of department.
Techniques for the geophysical propsection of near-surface geology, geohydrology, and geomorphology. Techniques include electro-magnetic, radar, sonar, and magnetism.
Non-traditional format: Course taught during summer semester utilizing applied field exercises in addition to traditional lecture/lab methods.

GEOL 4670/6670. Environmental Instrumental Analysis. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: CHEM 1212 and CHEM 1212L.
Lecture and laboratory course emphasizing principles and practical experience in chemical analysis of sediments, rocks and water, with particular emphasis on environmentally important organic and inorganic contaminants.
Non-traditional format: Field trip participation required.

GEOL(ANTH) 4700/6700. Archaeological Geology. 3 hours.
Archaeological geology examines the use of earth science methods and theories in the study of archaeological sites and their contents. The four major areas covered include: (1) the archaeological site and geology; (2) age determination techniques; (3) exploration techniques; (4) artifact characterization.

GEOL 4750/6750. Earth Sciences for Middle School Teachers. 4 hours.
Fundamentals of earth sciences for middle school teachers. Map interpretation; minerals and rocks; principles of astronomy, meteorology and oceanography. Processes at the surface and inside the Earth. Emphasis on plate tectonics; geologic time scale, evolution of life, and a study of fossils. Geology and resources of Georgia.

GEOL 4900/6900. Seminar in Geohydrology. 1 hour. Repeatable for maximum 6 hours credit.
Current and classical studies in geohydrology.

GEOL 4910/6910. Seminar in Geochemistry. 1 hour. Repeatable for maximum 6 hours credit.
Current and classical studies in geochemistry.

GEOL 4920/6920. Seminar for Geology Teaching Assistants. 1 hour.
Discussion of the delivery of geology laboratory material, including presentation techniques, attendance policy, grading, and support systems.

GEOL 4950/6950. Geology Seminar. 1 hour. Repeatable for maximum 6 hours credit.
Reviews and discussions of current research topics.

GEOL 4960H. Directed Reading and/or Projects (Honors). 3-4 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

GEOL 4970H. Directed Reading and/or Projects (Honors). 3-4 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

GEOL 4980H. Directed Reading and/or Projects (Honors). 3-4 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

GEOL 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the field of his/her major or in a closely related field.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

GEOL 4991. Senior Thesis. 3 hours.
Prerequisite: Permission of department.
Individual research in the field of geology or in a closely related field.
Non-traditional format: Students in this course meet with a supervising Geology faculty member as needed to successfully complete research assignments and a written thesis. Oral presentation of research results in a public forum is required.

(GREK) Greek

College of Arts and Sciences, Department of Classics

GREK 1001. Elementary Greek I. 4 hours.
Not open to students with credit in GREK 2050.
The grammar, reading, and translation of Classical Attic Greek.

GREK 1002. Elementary Greek II. 4 hours.
Not open to students with credit in GREK 2060.
Prerequisite: GREK 1001.
The grammar, reading, and translation of Classical Attic Greek, continued from Elementary Greek I.

GREK 2001. Intermediate Greek I. 3 hours.
Prerequisite: GREK 1002 or GREK 2060.
Review of Classical Attic Greek grammar, as needed, plus selected readings in Herodotus and Euripides.

GREK 2002. Intermediate Greek II. 3 hours.
Prerequisite: GREK 2001 or permission of department.
Selected readings in Homer and Plato.

GREK 2050. Intensive Elementary Greek I. 4 hours.
Not open to students with credit in GREK 1001.
Corequisite: GREK 2060.
The pronunciation, grammar, reading, and translation of Classical Attic Greek.

GREK 2060. Intensive Elementary Greek II. 4 hours.
Not open to students with credit in GREK 1002.
Prerequisite: GREK 2050.
A continuation of Intensive Elementary Greek I.

GREK 3000. Intermediate Greek III. 3 hours.
Prerequisite: GREK 2002.
Selected readings in Homer and Plato.

GREK 4010/6010. Homer. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GREK 2002 or permission of department.
Selections from the *Iliad* and/or the *Odyssey*.

GREK 4020/6020. Hesiod. 3 hours.
Prerequisite: GREK 2002 or permission of department.
Study of Hesiod's two surviving poems, the *Theogony* and the *Works and Days*, with special attention to the relationship of his language and religious thinking to that of Homer.

GREK 4030/6030. Greek Lyric Poets. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GREK 2002 or permission of department.
Selected Greek elegy and lyric, with attention to its political and social background, and to the relation of these literary types to epic and dramatic poetry.

GREK 4040/6040. Thucydides. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GREK 2002 or permission of department.
The Peloponnesian War through selected readings.

GREK 4050/6050. Aeschylus. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GREK 2002 or permission of department.
Aeschylus' plays, with emphasis on his theology and special uses of the Greek language.

GREK 4060/6060. Sophocles. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GREK 2002 or permission of department.
Sophocles' plays, with emphasis on the poet's

religious and humanistic values and his dramatic style.

GREK 4070/6070. Euripides. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GREK 2002 or permission of department.
Euripides' plays, with emphasis on the poet's dramatic style and his treatment of social, political, and religious themes.

GREK 4080/6080. Aristophanes. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GREK 2002 or permission of department.
Selected comedies of Aristophanes. Emphasis is placed on language, style, and thought, and on the generic characteristics of Greek Old Comedy.

GREK 4090/6090. Advanced Readings: Plato. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GREK 2002 or permission of department.
The dialogues of Plato. Emphasis is placed on the language, style, and philosophical thought of Plato.

GREK 4100/6100. Attic Orators. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GREK 2002 or permission of department.
Orations drawn from the works of Demosthenes, Lysias, and Aeschines, with emphasis on the function and techniques of persuasion in oratory and on the political and social contexts of these orations.

GREK(LATN)(LING) 4150/6150. Comparative Grammar of Greek and Latin. 3 hours.
Prerequisite: Undergraduate level only: LATN 3010 or GREK 2002 or permission of department Graduate level only: Pass on Classics Department Greek or Latin proficiency exam or permission of department.
The positions of Greek and Latin within the Indo-European language family with special attention to the phonological evolution of both Greek and Latin from Proto-Indo-European.

GREK 4200/6200. Readings in Selected Greek Authors. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: GREK 2002 or permission of department.
Selected Greek authors to be chosen according to the interests of students and instructor.

(GRMN) German

College of Arts and Sciences, Department of Germanic and Slavic Languages

GRMN 1001. Elementary German I. 4 hours.
Fundamentals of grammar, pronunciation, conversation, reading, and translation. Additional language laboratory work required.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

GRMN 1002. Elementary German II. 4 hours.
Prerequisite: GRMN 1001.
A continuation of Elementary German I.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

GRMN 1110. Accelerated Elementary German. 4 hours.
Not open to students with credit in GRMN 1001 or GRMN 1002.
Prerequisite: Placement Test.
Accelerated course reviewing basic principles of the German language for students with some background in high school German.

GRMN 1140H. Elementary German (Honors). 4 hours.
Not open to students with credit in GRMN 1001 or GRMN 1002.
Prerequisite: Permission of Honors.
A combination of Elementary German I and Elementary German II.

GRMN 2001. Intermediate German I. 3 hours.
Prerequisite: GRMN 1002.
Grammar, reading, and translation of intermediate texts, composition, and conversation. Additional language laboratory work may be required.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

GRMN 2002. Intermediate German II. 3 hours.
Prerequisite: GRMN 2001.
Readings in modern German prose, composition, and conversation. Additional language laboratory work may be required.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

GRMN 2140H. Intermediate German (Honors). 3 hours.
Not open to students with credit in GRMN 2001 or GRMN 2002.
Prerequisite: GRMN 1002 and permission of Honors.
Intensive readings in modern German literature and

culture, composition, and conversation. Additional language laboratory work may be required.

GRMN 2300. Introduction to German Culture Studies. 3 hours.
Introduces central texts, schools, and debates of German cultural studies and their relationship to literature and film. Issues addressed may include nationalism, gender studies, psychoanalysis, postmodernism, pop culture, and critiques of industrial/capitalist society. Required of all German majors; open to all students. Taught in English.

GRMN 3001. German Conversation and Composition I. 3 hours.
Prerequisite: GRMN 2002.
Oral and written practice, original compositions, and selected readings in German culture and literature.

GRMN 3002. German Conversation and Composition II. 3 hours.
Prerequisite: GRMN 3001.
A continuation of German Conversation and Composition I.

GRMN 3010. Language: Culture and Society I. 3 hours.
Not open to students with credit in GRMN 3060 or GRMN 3070.
Prerequisite: GRMN 2002 or permission of department.
Refines basic command of the language, emphasizing written and oral expression. Materials include historical and autobiographical texts that acquaint students with German history and culture from 1900 to the present. Discussion of social, cultural, and political questions central to the development of modern Germany.

GRMN 3020. Language: Culture and Society II. 3 hours.
Not open to students with credit in GRMN 3080.
Prerequisite: GRMN 3001 or GRMN 3010 or permission of department.
Development of language skills, emphasizing compositions, oral reports, discussions. Organized around literature, film, websites, and nonfiction on topics pertaining to contemporary Germany. Topics include political movements and parties; issues of postunification, the GDR and the Nazi past; multiculturalism; environmentalism; the press and other media; and Germany in a united Europe.

GRMN 3070. Business and Political German I. 3 hours.
Not open to students with credit in GRMN 3010 or GRMN 3060.
Prerequisite: GRMN 2002 or permission of department.
An overview of Germany's contemporary political scene and economic position, Germany in the European Union, and its relation to the United States and the global economy. Communication skills for use in the German-speaking workplace and practical tools to access and understand German political/business media.

GRMN 3080. Business and Political German II. 3 hours.
Not open to students with credit in GRMN 3020.
Prerequisite: GRMN 3001.
Further develops the themes of Business German, with increasing emphasis on personal and group project development and a high level of German linguistic and cultural competence. Students will explore German politics and companies in detail, research case histories, and follow recent developments, trends, and conflicts in the German and European political/economic scene.

GRMN 3100. German Culture and Literature. 3 hours.
Prerequisite: GRMN 3001.
The interrelationship between German culture (history, art, philosophy, music) and literature from the eighteenth century to the present.

GRMN 3110. Germania. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
Explores the diverse histories and cultures of pre-national Germany from the Germanic barbarians through the Holy Roman Empire to the Thirty Years' War (1618-48). Emphasis on history, archaeology, art, and architecture, as well as their historical, religious, and political context. Taught in German.

GRMN 3200. German Landeskunde. 3 hours.
Prerequisite: GRMN 3001.
The geography, political, social, educational, and cultural institutions of Germany.

GRMN 3220. The Age of Reformation. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
Multi-media investigation of the period of massive intellectual and religious transition between 1350 and 1600 in the German-speaking lands. Emphasis on the Catholic conciliar movement; the Protestant Reformation and Sectarianism; and the rise and spread of Northern Humanism. Includes close-readings of German texts. Taught in German.

GRMN 3250. Survey of German Literature from the Beginnings to the Enlightenment. 3 hours.
Prerequisite: GRMN 3001.
Reading and analysis of representative German works from the Old High German and Middle High German periods, Humanism, the Reformation, the Renaissance, and the Baroque.

GRMN 3260. Survey of German Literature from the Enlightenment to the Present. 3 hours.
Prerequisite: GRMN 3001.
Reading and analysis of representative German works of the Enlightenment, Storm and Stress, Classicism, Romanticism, Realism and the twentieth century.

GRMN(LING) 3380. Contrastive Grammar of English and German. 3 hours.
Prerequisite: GRMN 2002.
Contrastive analysis of German and English phonology and grammar. Prepares future teachers of German to identify structural differences between English and German.

GRMN 3410. Revolution, Revolt, and Nationlism in the Nineteenth Century. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
Discussion of texts by German/Austrian writers and artists who responded to and participated in political movements of the nineteenth century. Texts address the Napoleonic Wars, democratic visions, the mid-century revolts, women's rights, Jewish emancipation, and the rise of nationalism. Taught in German.

GRMN 3420. The German Romantic Age. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
What is Romanticism? How do artistic disciplines vary in their expression of Romantic ideals? Works include nineteenth-century poems, fairy tales, short fiction, letters, brief philosophical texts, music, and art. Taught in German.

GRMN 3500. Techniques of Translation. 3 hours.
Review of grammar, idioms, and vocabulary; practice in translating moderately difficult technical and non-technical German texts into correct English. Does not apply to the major or minor in German or language certificates. Satisfies language requirement for graduate students.

GRMN 3600H. Heroic Literature (Honors). 3 hours.
Prerequisite: Permission of Honors.
The oldest northern European medieval literary movements from the Age of Migrations to the Viking period, with influences from mythology and folklore. Taught in English.

GRMN 3610. Discourses of Post-War Literature. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
Post-war German-speaking literature and ideas. Traces literary themes and topics and analyzes their social, political, and cultural context. Includes aftermath of World War II (philosophical, political, cultural, economic), feminism, new politics of the 60s/70s, terrorism, foreigners/guestworkers/immigrants, East and West Germany, Generation X. Taught in German.

GRMN 3625. Post-War Women Writers. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
The construction of gender, history, and representation in novels, poems, and essays of post-war women writers from German-speaking countries. Explores how femininity and feminism inform lives and texts. Taught in German.

GRMN 3630. Memory, History, Narrative. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
Personal and historical memory in literary texts. Discussion of "Geschichte" in its multiple meanings of history and story, questions of literary representation, and role of gender. Longer narratives supplemented by short stories, essays, interviews, and music that illuminate socio-historic contexts. Taught in German.

GRMN 3710. The Wall. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
The Berlin Wall as a site of history and imagination within the context of post-war politics, culture, and everyday life. Discussion of the physical border and the persistence of mental "walls" between East and West Germans. Prose supplemented by political documents, interviews, films, and music. Taught in German.

GRMN 3810. Literature in Music, Music in Literature. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
Explores the synthesis of the verbal and musical arts in German culture from a dual perspective: literary content of musical genres (such as minne- and meistersang, Lutheran hymn, cantata, opera, folk song, lied), and musical structures and themes in certain literary works. Taught in German.

GRMN 3820. German Film. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
The history of German film and its political, social, and cultural contexts. Includes expressionism, nazi film, post-war "Heimatfilm," new German cinema, the post-wall comedy wave, and the contemporary state of German film making. Taught in German.

GRMN 3830. Children's and Youth Literature. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
Examines the representation of childhood in German juvenile literature in various genres. Issues of identity and self-realization in traditional and contemporary children's literature. Focuses on stories that reflect upon the art and value of storytelling, as well as the nature and function of creative imagination. Taught in German.

GRMN 3840. The Jewish Experience in German Culture. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
Contributions of Jews and Jewish culture to the German-speaking world. Emphasis on how Jewish writers, thinkers, and artists portray their experiences and identities. Responses of Jews and non-Jews to discrimination, emancipation, assimilation, the Holocaust, and the Jewish presence in Germany today. Taught in German.

GRMN 3860. The Evolution of German as a Standard Language. 3 hours.
Prerequisite: GRMN 2002 or permission of department.
Provides an understanding of the linguistic processes and cultural factors determining the evolution of German as a codified standard language from the Reformation to the present.

GRMN 3990. Directed Study in German. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: GRMN 3001 or GRMN 3002.
Independent study and research under the direction of individual faculty members.
Non-traditional format: Directed study.

GRMN 4001/6001. Advanced German Conversation and Composition. 3 hours.
Prerequisite: GRMN 3002.
Vocabulary building and review of grammar. Emphasis on common errors of English speakers and on distinctions in meaning.

GRMN 4300/6300. German Literature from the Enlightenment through Classicism. 3 hours.
Prerequisite: GRMN 3001.
Representative readings from Enlightenment, Empfindsamkeit, Storm and Stress, and Classicism. Includes texts that provide background on eighteenth-century political, social, and cultural developments.

GRMN 4310. Germany and the French Revolution. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
The political and literary reception of the French Revolution in Germany. Includes representative literature of German classicism, travelogues and journalistic writings by German Jacobins, and political and sociological essays from 1775 to 1806. Focuses on the relationship between politics and aesthetics. Taught in German.

GRMN 4400/6400. German Literature from Romanticism through Realism. 3 hours.
Prerequisite: GRMN 3001.
Representative readings from early to late Romanticism, Junges Deutschland, Vormaerz, Biedermeier, and Realism. Includes texts that provide background on nineteenth-century political, social, and cultural developments.

GRMN 4410. The Holocaust in German Literature and Film. 3 hours.
Prerequisite: GRMN 3001 or GRMN 3010 or GRMN 3070 or permission of department.
Literary and cinematic representations of the Holocaust from post-war to contemporary Germany. Topics include: artistic versus historical truth, moral and ethical dimensions, representation in different media. Additional readings address the social, political, and cultural significance of the Holocaust in German society. Taught in German.

GRMN(LING) 4460/6460. Structure of Modern German. 3 hours.
Prerequisite: GRMN 3001.
Linguistic and sociolinguistic structures of modern German with relevant linguistic terminology. Emphasis on phonology, morphology, and syntax. Taught in English.

GRMN 4500/6500. German Literature from Naturalism to the Present. 3 hours.
Prerequisite: GRMN 3001.
Representative readings from Naturalism, Impressionism, Expressionism, wartime and post-war literature, literature of the GDR, and contemporary literature through post-unification. Includes texts that provide background on twentieth-century political, social, and cultural developments.

GRMN 4510. Special Topics in German Literature or Linguistics. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GRMN 3001.
Intensive reading and study of a genre, period, or topic.

GRMN 4520. Senior Seminar. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GRMN 3002.
Capstone course for German majors, minors, and advanced students. Selected topics in German literature and culture. Required for German majors.

GRMN 4810. Contemporary Issues in German Business and Politics. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: GRMN 3080.
Builds detailed, specialized knowledge of cutting-edge issues in contemporary German/European public and corporate life. Current events and student-teacher consensus will determine thematic foci. Intended to foster competence in reading "newspaper" German and development of a good formal written style with emphasis on rhetoric and idioms.

GRMN 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: GRMN 3001 and permission of Honors.
Individual study, reading, or project under the direction of a project director.
Non-traditional format: Directed study.

GRMN 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: GRMN 3001 and permission of Honors.
Individual study, reading, or project under the direction of a project director.
Non-traditional format: Directed study.

GRMN 4990H. Honors Thesis. 3 hours.
Prerequisite: GRMN 3001 and permission of Honors.
Individual research, under the direction of a project director, leading to a formal thesis.
Non-traditional format: Directed study.

(GRNT) Gerontology

Gerontology Center

GRNT 4010/6010. Biogerontology. 3 hours.
The physiological and anatomical changes that occur as a person ages. The basics of the biology of aging followed by a system by system description of the aging phenomena in the human body.

GRNT(PSYC) 5266/7266. Death, Dying, and Bereavement. 3 hours.
Prerequisite: Permission of department.
Multi- and inter-disciplinary approaches are used to explore death, dying, and bereavement from a variety of biopsychosocial perspectives.

(HACE) Housing and Consumer Economics

College of Family and Consumer Sciences, Department of Housing and Consumer Economics

HACE 2000. Introduction to Family and Consumer Sciences. 1 hour.
The specialties and professions comprising the fields in family and consumer sciences. Systems perspective is emphasized in examining quality of life issues. Discussions include the personal, professional, and technical elements involved in career development.

HACE 2100. Family Economic Environment. 3 hours.
The family as a producing and consuming unit, including the decision-making processes involved and the special role of housing. Emphasis is on interrelationships among decisions and the links between economic and social issues.

HACE 3000. Family Resource Management. 3 hours.
Individual and family management, including value orientation, decision-making, and creation and utilization of resources. Special emphasis placed on application of concepts to unique managerial situations encountered in day-to-day living.

HACE 3010. Directed Study in Housing and Consumer Economics. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Designed for the senior major to permit independent study and research.
Non-traditional format: Directed study.

HACE 3100. Introductory Consumer Economics. 3 hours.
Concepts underlying consumer economics. Emphasis is on the consumer in the marketplace, consumer choice, information search, consumer protection, including redress and consumer affairs as a profession.

HACE 3150. Consumer Decisions: Home and Market. 3 hours.
Prerequisite: ECON 2106.
Theories of consumer and household decision making. Applications of economic theories to basic issues confronting consumers in the marketplace. Family economic models and theories of household time allocation.

HACE 3200. Intermediate Family Financial Management. 3 hours.
Prerequisite: HACE 2100.
Cash flow management and consumption expendi-

tures, credit and debt, simple applications of personal income taxes, risk management, property and health insurance, and employee benefits. A variety of case studies with different household compositions will be used to provide practical applications on each topic. Computer applications will be used with some topics.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

HACE 3300. Housing in Contemporary Society. 3 hours.
Present-day family housing needs from the standpoint of health, safety, environment, finance, ownership, types of dwellings, and minimum standards. Basic terms and concepts to establish a foundation for other Housing and Consumer Economics housing classes.

HACE 4100/6100. Family Economic Behavior and Policy. 3 hours.
Prerequisite: Undergraduate level only: HACE 3150.
The family as an income producing and time allocating unit. Theory and application of the economics of household decision making. The family as the supplier and demander of economic inputs and outputs. The interrelationship between demographic and economic family characteristics and well-being.

HACE 4200/6200. Advanced Family Financial Management. 3 hours.
Prerequisite: Undergraduate level only: HACE 3200.
Personal income taxes, life insurance, disability insurance, liability insurance, savings and investment, retirement planning, and estate planning.

HACE 4300/6300. Advanced Housing Theories. 3 hours.
Prerequisite: Undergraduate level only: HACE 3300.
Sociological and economic theories of housing consumption and production in housing markets, including basic concepts of housing needs, quality, norms and satisfaction. Economic theories relating to characteristics of housing and capital markets, including primary and secondary mortgage markets and alternative financing.

HACE 4310/6310. Housing Policy. 3 hours.
Prerequisite: Undergraduate level only: HACE 3300.
Housing policies at the federal, state, and local levels as they relate to current housing markets. Barriers and incentives for housing development activities created by regulations, finance, and taxation. The role of public/private initiatives in the provision of housing.

HACE 4350/6350. Household Technology and Systems. 3 hours. 2 hours lecture and 2 hours lab per week.
Technological devices and their use within the household, including mechanical and electrical systems, home automation, universal design, regulation, and national appliance standards.

HACE 4400/6400. Family Demographics and Policy. 3 hours.
Prerequisite: Undergraduate level only: HACE 2100 or SOCI 1101.
Basic concepts and measurement issues of family demography, including migration, income, marriage, and divorce; implications of family structural characteristics for public policies.

(HACE)CHFD 4500/6500. Aging and the Family. 3 hours.
Prerequisite: Junior standing or permission of department.
Review of theory, research, and methodology on aging and the family. Emphasis rests with identifying current concepts and controversies, and diversity in the experiences of families and aging individuals.

HACE 4900/6900. Seminar in Housing and Consumer Economics. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Selected topics and problems in housing and consumer economics.
Non-traditional format: Course should be variable to accommodate non-traditional format for seminar and departmental orientation classes.

HACE 4960H. Directed Reading and/or Projects (Honors). 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HACE 4970H. Directed Reading and/or Projects (Honors). 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HACE 4980H. Directed Reading and/or Projects (Honors). 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HACE 4990H. Honors Thesis. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of Honors.
Individual research in the major field.
Non-traditional format: Directed study.

HACE 5100/7100. Consumer Protection. 3 hours.
Undergraduate prerequisite: HACE 3100 and HACE 3150.
Consumer rights and responsibilities in the private and public sector of the economy. Relationship of government, nonprofit, and corporate response to consumer problems; legislation concerning consumer information, product safety, and choice of goods and channels of appeal for the consumer.

HACE 5150/7150. Consumers' Market Environment. 3 hours.
Prerequisite: HACE 3100 and HACE 3150.
The consumer marketplace in terms of the welfare of the consumer. Actions of consumers with changing marketplace, institutions, and government policies.

HACE 5200/7200. Family Financial Counseling. 3 hours.
Prerequisite: Undergraduate level only: HACE 3200.
Indicators, causes, and impact of family financial problems on the family's well-being. Topics covered include credit difficulties, repossessions, liens, garnishments, and bankruptcy.
Non-traditional format: Students are required to work on a regular basis with families in financial difficulty.

HACE 5250/7250. Family Financial Planning. 3 hours.
Prerequisite: HACE 4200/6200.
Advanced financial topics and development of a comprehensive financial plan. Regulation, certification, and legal and ethical requirements for financial planners.

HACE 5350/7350. Housing Counseling. 3 hours.
Prerequisite: Undergraduate level only: HACE 3300.
Basic information for certification as a Professional Housing Counselor. Includes basic techniques for housing, budget, and tenancy counseling.

HACE 5710/7710. Study Tour in Housing and Consumer Economics. 3-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Topics relating to housing and/or consumer economics, with site visits to relevant locations. Combines in-depth study with first-hand experience gained on site.
Non-traditional format: Lecture, tour, and other activities for the length of the program.

HACE 5900/7900. Professional Seminar and Internship Orientation. 1 hour.
Orientation to an internship experience.

HACE 5910/7910. Housing and Consumer Economics Internship. 3-9 hours. Repeatable for maximum 15 hours credit.
Prerequisite: HACE 5900/7900.
Supervised work experience in housing, consumer economics, or consumer journalism.
Non-traditional format: Internship.

(HEBR) Hebrew

College of Arts and Sciences, Department of Religion

HEBR 1001. Elementary Biblical Hebrew I. 4 hours.
A study of classical Hebrew grammar.

HEBR 1002. Elementary Biblical Hebrew II. 4 hours.
Prerequisite: HEBR 1001.
A continuation of Elementary Biblical Hebrew I.

HEBR 2003. Intermediate Biblical Hebrew I. 3 hours.
Prerequisite: HEBR 1002.
Classical Hebrew grammar with reading of selected texts from the Hebrew Bible/Old Testament.

HEBR 2004. Intermediate Biblical Hebrew II. 3 hours.
Prerequisite: HEBR 2003.
Readings of Hebrew texts selected from the Hebrew Bible/Old Testament, Dead Sea Scrolls, or early rabbinic literature.

HEBR 4100/6100. Reading and Research in Hebrew Literature. 3 hours. Repeatable for maximum 9 hours credit. 9 hours lab per week.
Prerequisite: HEBR 2004 or permission of department.
Directed study in reading and research in classical Hebrew literature.
Non-traditional format: Directed study.

HEBR 4960H. Directed Reading and/or Projects (Honors). 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HEBR 4970H. Directed Reading and/or Projects (Honors). 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HEBR 4980H. Directed Reading and/or Projects (Honors). 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HEBR 4990H. Honors Thesis. 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual research in the major field or in a closely related field.
Non-traditional format: Directed study.

(HIPR) Historic Preservation

School of Environmental Design

HIPR 4000/6000. Introduction to Historic Preservation. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: Permission of school.
Historic preservation theory, its evolution and practice, and its relationship to the concept of environmental quality.

(HIST) History

College of Arts and Sciences, Department of History

HIST 1200. Introduction to Latin America and the Caribbean. 3 hours.
An introduction to Latin American and Caribbean culture andhistory to students with no previous background in the subject.The emphasis in the course is on peoples and processes andchange rather than on institutions and events.

HIST 2050H. Multicultural America (Honors). 3 hours.
Not open to students with credit in HIST 2051 or HIST 2052.
Prerequisite: Permission of Honors.
United States history from a multicultural and multiethnic perspective. Examines the roles Native Americans, European Americans, African Americans, Hispanic Americans, and Asian Americans have played in the making of America. The course begins in seventeenth-century Virginia and continues to the present.

HIST 2051. Multiculturalism in Early America. 3 hours.
The multicultural reality of the American experience from the 1600s through the 1800s by examining the complex interactions of people of diverse races, ethnicities, classes, and gender in forging the American nation.

HIST (AFST) 2052. Multiculturalism in Modern America. 3 hours.
United States history since 1865 from a multicultural and multiethnic perspective. The course will emphasize social, cultural, and political dimensions of the American experience, paying particular attention to issues of race and ethnicity. Highlights the contributions of the many different peoples who make up America.

(HIST)AFST(ANTH)(CMLT)(GEOG)(SOCI) 2100. Introduction to Africa. 3 hours.
The history, physical environment (landforms, vegetation, and climate), and sociocultural environment (artistic, political, and social development) of Africa.

HIST 2111. American History to 1865. 3 hours.
American society, politics, thought, institutions, and economic life from the first settlements to the end of the Civil War.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

HIST 2111H. United States Survey to 1865 (Honors). 3 hours.
Not open to students with credit in HIST 2111.
Prerequisite: Permission of Honors.
United States survey at the honors level will deal more thematically than the regular survey with a variety of issues in American history from its founding through the Civil War. Emphasis on primary sources and research and writing, often with a seminar format.

HIST 2112. American History Since 1865. 3 hours.
Not open to students with credit in HIST 2112H.
Development of the American nation from 1865 to the present.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

HIST 2112H. History of the United States 1865 to Present (Honors). 3 hours.
Not open to students with credit in HIST 2112.
Prerequisite: Permission of Honors.
The major political, economic, social, and cultural changes in the United States from reconstruction to the present.

HIST 2221. Latin American Civilization to 1800. 3 hours.
Amerindian, Iberoamerican, and Caribbean history and culture from pre-encounter times to 1800.

HIST 2222. Latin American Civilization Since 1800. 3 hours.
Latin American and Caribbean history and culture from 1800 to the present.

HIST 2301. History of Western Society to 1500. 3 hours.
The major ideas and images that make up the foundation of modern western society. The origin and formation of Judaism, Christianity, and Islam. The growth of ideas of law and political philosophy.

HIST 2302. History of Western Society Since 1500. 3 hours.
Western society from the Renaissance to the present day, emphasizing ideas, culture, and social change.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

HIST 2311H. Western Society to 1500 (Honors). 3 hours.
Not open to students with credit in HIST 2301.
Prerequisite: Permission of Honors.
The social, political and economic developments in the west to 1500 A.D.

HIST 2312H. Western Society Since 1500 (Honors). 3 hours.
Not open to students with credit in HIST 2302.
Prerequisite: Permission of Honors.
Integrating social, cultural, and political history, this course includes such topics as religion, changing social structures and gender identities, industrialization, revolution and the rise of nationalism, Europe and the world, modern wars and mass political movements.
Non-traditional format: Taught as a seminar with extensive readings in primary and secondary sources.

HIST (AFST) 2501. Introduction of African History to Sixteenth Century. 3 hours.
Cultural history of Africa to sixteenth century. Origins of agriculture, rise and growth of complex societies and states, spread and importance of Islam, slavery and diaspora issues.

HIST 2502. Survey of African History After 1600. 3 hours.
The social, political, and economic development of Sub-Saharan African societies and their assimilation of non-African peoples, their ideas, and materials culture after 1600. African and European objectives intertwined and contradicted. Transformations after 1600 were a continuation of those precipitated by trade, migration, conquest, religion, and innovation.

HIST 2560. The Middle East Since 1914. 3 hours.
Not open to students with credit in HIST 3570H.
History of the Middle East from World War I to the present, focusing on political, religious, cultural, and economic circumstances.

HIST 2601. East Asian Civilizations I. 3 hours.
Historical, religious, political, economic, and social traditions of East Asia, from prehistory to the seventeenth century, emphasizing political and cultural interaction within the region.

HIST 2602. East Asian Civilizations II. 3 hours.
Historical, religious, political, economic, and social traditions of East Asia, from the seventeenth century to the present, emphasizing political and cultural interaction within the region.

HIST 2701. World Civilizations I. 3 hours.
The human community from ancient times to A.D. 1500, focusing on the interrelations of societies and cultures and comparing the experiences of peoples and civilizations with one another.

HIST 2702. World Civilizations II. 3 hours.
The human community from A.D. 1500 to the present, focusing on the interrelations of societies and cultures and comparing the experiences of peoples and civilizations with one another.

HIST 2702H. World Civilizations II (Honors). 3 hours.
Not open to students with credit in HIST 2702.
Prerequisite: Permission of Honors.
The human community from A.D. 1500 to the present, focusing on the interrelations of societies and cultures and comparing the experiences of peoples and civilizations with one another.

HIST 3020. United States Foreign Relations Since 1914. 3 hours.
A survey of American foreign relations since 1914.

HIST 3030. History of Canada. 3 hours.
The history of Canada from European settlement to the present day. Special attention will be given to political, constitutional, and economic developments.

HIST 3050. American Indian History to 1840. 3 hours.
Explores the impact of colonization on Native Americans to 1840. The course will focus on the creative adaptations of Indians to the great changes unleashed by the meeting of the new and old worlds.

HIST 3051. American Indian History Since 1840. 3 hours.
Government policy towards Indians, but more importantly, exploration of how Native Americans themselves constructed their lives over the past 150 years. The readings give voice to Indians while at the same time providing a structured historical background.

HIST 3060. Colonial and Revolutionary America. 3 hours.
Native American, African, and European interactions; warfare, labor systems, cultures, and societies; empire building and colonial political structures;

the American Revolution and the formation of the United States.

HIST 3071. Origins of Modern America. 3 hours.
Economic, social, diplomatic, and political trends in the United States, 1877-1917.

HIST 3072. The United States Between the Wars, 1914-1945. 3 hours.
The shifting patterns of political, economic, cultural, and social development in the United States as the nation confronted prosperity, depression, and war.

HIST 3073. Modern America, 1945 to Present. 3 hours.
Social, economic, diplomatic, and political trends in the United States during the post-World War II era.

HIST 3080H. America and the World (Honors). 3 hours.
Prerequisite: Permission of Honors.
Selected aspects of United States relations with the world in the twentieth century.

HIST 3085. United States Women's History. 3 hours.
Not open to students with credit in HIST 4080/6080.
Women's experiences in the United States since the arrival of Europeans on the North American continent. Women's life experiences within the context of larger historical changes in the United States. Women's history as an integral part of American social history and as a unique subject of historical investigation.

HIST 3090. The American South. 3 hours.
Major themes and issues in southern history from Jamestown through the 1980s. Topics will include colonial settlement, frontier expansion, slavery, the Civil War and Reconstruction, Populism, Jim Crow, the New South, the civil rights movement, and Sunbelt development.

(HIST)ENGL 3100. Introduction to British Culture I. 3 hours.
Prerequisite or corequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or CMLT 2250H or CMLT 2260H or ENGL 2310 or ENGL 2320 or ENGL 2340 or ENGL 2350H or ENGL 2360H or ENGL 2370H or ENGL 2380H or ENGL 2390H or ENGL 2400.
Interdisciplinary, writing-intensive course in British literature and history for University of Georgia at Oxford students. Readings organized around geographical sites in Britain using newest Web technologies.
Non-traditional format: Web-based remote delivery course that students will take from their hometowns during the "downtime" between the start of the spring semester at the University of Georgia and the beginning of the Oxford Trinity term.

HIST 3101. The Early African American Experience. 3 hours.
The African background of African Americans, the institution of slavery, the development of the African American community institutions, and African American participation in and impact on the Civil War and Reconstruction.

HIST 3102. Modern African American Experience. 3 hours.
The twentieth-century struggle for civil rights, black identity, and self-determination. The response to industrialism and urbanization. The role of black institutions and political organizations. The philosophy and tactics of accommodation, integration, and separatism.

(HIST)ENGL 3110. Introduction to British Culture II. 3 hours.
Prerequisite or corequisite: CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or CMLT 2250H or CMLT 2260H or ENGL 2310 or ENGL 2320 or ENGL 2340 or ENGL 2350H or ENGL 2360H or ENGL 2370H or ENGL 2380H or ENGL 2390H or ENGL 2400.
Interdisciplinary, writing-intensive course in British literature and history for University of Georgia at Oxford students. Readings organized around geographical sites in Britain using newest Web technologies.
Non-traditional format: Web-based remote-delivery course. Course will be offered via the Web during "downtime" between start of the University of Georgia's spring semester and Oxford term.

(HIST)RELI 3150. Religion in the United States. 3 hours.
Prerequisite: Junior standing or permission of department.
The significant developments in American religious history and thought from Puritanism to the present with attention to the social and cultural contexts in which various religious movements arose.

HIST 3160. American Environmental History. 3 hours.
The historical interactions between Americans and the natural environment from before European exploration and settlement until the present. The course particularly focuses on how nature has shaped human history, how humans have transformed the natural world, and how ideas about nature have changed over time.

HIST 3220. History of Mexico. 3 hours.
Mexican history and culture from pre-Columbian times to the present.

HIST 3230. History of Brazil. 3 hours.
Brazilian history and culture from pre-Columbian times to the present.

HIST 3240. The Caribbean Area. 3 hours.
The islands and Caribbean periphery from pre-Columbian times to the present. European intrusion and settlement, plantation societies and economies, slavery and slave rebellion, nineteenth- and twentieth-century political and economic developments, and United States policy. Approximately one-third of the course will focus on the period after World War II.

HIST 3250. History of the Americas. 3 hours.
The Western hemisphere from pre-Columbian times, with emphasis on social and economic development and the evolution of political cultures from the American Revolution to the present.

HIST 3260. Latinos/Latinas in the United States. 3 hours.
A history of the Latino peoples in the United States and in Georgia, their diversity and their contributions to United States culture and society.

HIST(CLAS) 3310. Ancient History. 3 hours.
The political and economic world from the Stone Age to the end of the Western Roman Empire in 476 A.D.

HIST(CLAS) 3311. History of Ancient Greece. 3 hours.
Not open to students with credit in HIST(CLAS) 4311/6311.
From the foundations of Greek civilization through the conquests of Alexander the Great. Warfare and imperialism, the Greek city-state, and the origins of democracy will be covered, as well as topics in social and cultural history — law, the role of women, the economy, the naturalist tradition in art, and the public architecture of Athens.

HIST(CLAS) 3312. Roman History. 3 hours.
Ancient Rome from its mythical foundation to the conversion of Constantine. The rise and fall of the Roman empire, including its great wars and political struggles; also topics in social and cultural history, such as Roman values and national identity, life in the empire's provinces, and the roles of women in society.

HIST(CLAS) 3321. History of Women in the Ancient World. 3 hours.
The history of women in many of the ancient civilizations of the Mediterranean and Middle East. The social, religious, and political roles played by women of different classes within the patriarchal framework of these societies. Emphasis will be placed on the reading and discussion of primary sources.

HIST 3323. History of Women in Early Modern Europe. 3 hours.
The experiences, challenges, and achievements of women in early modern Europe. Perceptions of women—religious, literary, political, and social. Through such study, we can learn more both about women and about how society functioned and responded to change.

HIST 3324. History of Women in Modern Europe. 3 hours.
The experiences, challenges, and achievements of women in modern Europe. Perceptions of women—religious, literary, political, and social. Through such study, we can learn more both about women and about how society functioned and responded to change.

HIST 3330. The Medieval World. 3 hours.
Medieval Europe from 476 to the fall of Constantinople in 1453. The rise of the Catholic Church to its dominance of thirteenth- century Europe and the struggle of kings with their feudal values will be discussed against the backdrop vs. ravages of the Inquisition and the Black Death.

HIST 3332. Wenches, Witches, Damsels and Nuns: Women in Medieval Europe. 3 hours.
The ideas about and images of women throughout the medieval period. The issues of political, economic, and social rights of women of different classes. The presence of misogyny will be questioned.

HIST 3340. The Age of Renaissance and Reformation. 3 hours.
The two great intellectual movements of early modern Europe: the Renaissance and the Reformation. The religious and social context in which the developments associated with these movements took place, as well as their impact on European society.

HIST 3350. The Age of Absolutism: Rulers, Subjects, Citizens. 3 hours.
The rise of the modern European state and its impact on society and culture from 1600 to 1789. Themes include kingship and state formation, popular revolt, aristocratic culture, Enlightenment social thought, and the collapse of the Old Regime.

HIST 3361. Europe's Revolutionary Century, 1789-1900. 3 hours.
The history of Europe from 1789 to 1900, emphasizing political and social change, the spread of revolutionary ideas, and the rise of nation states.

HIST 3362. Twentieth-Century Europe. 3 hours.
Major political, economic, social, and cultural developments.

HIST 3371. Tudor-Stuart England. 3 hours.
English history in the sixteenth and seventeenth centuries.

HIST 3372. English History Since 1660. 3 hours.
English history from the Restoration to the present. Emphasis will be on political and cultural change as well as economic and imperial development.

HIST 3381. Old Regime and Revolutionary France. 3 hours.
French history from the sixteenth to the late eighteenth century. Peasant life, social hierarchy, religious conflict, the politics and culture of Absolutism, the Enlightenment, the fall of the Old Regime, and the French Revolution.

HIST 3382. Modern France Since 1799. 3 hours.
French social and political history in the nineteenth and twentieth centuries. Processes of urbanization and industrialization in the nineteenth century and French political and cultural development in the twentieth century.

HIST 3390. Germany Since 1789. 3 hours.
Germany from 1789 through the Revolutions of 1848, German unification, the Wilhelminian Reich, World War I, the Weimar Republic, the Third Reich, World War II, division, and reunification.

HIST 3400. Modern Italy. 3 hours.
The eighteenth-century beginnings of the movement for unification to the present, with particular emphasis on the distinctiveness of the Italian experience in culture, society, and politics.

HIST 3411. Russia to the Great Reforms. 3 hours.
Traces rise of Russian state from Kievan Rus through Tsardom of Nicholas I. High points include Mongol legacy, rise of Muscovy, the "Time of Troubles," and creation of modern state structure by Peter I (The Great). Final focus is on nineteenth-century reform beginnings and rise of revolutionary movement.

HIST 3412. Modern Russia: Revolution, the USSR, and Aftermath. 3 hours.
Stresses Alexander II's reforms and subsequent Tsarist policies plus parallel advance of the revolutionary movement to the 1917 Bolshevik takeover. Post-1917 coverage emphasizes Leninist-Stalinist contributions and subsequent modifications culminating with Gorbachev period. Ends with 1991 Communist downfall and emergence of a new Russia.

HIST 3415. Modern Eastern Europe. 3 hours.
A survey of the peoples and states of eastern, east-central, and southeastern Europe in the late nineteenth century. Issues of politics, society, culture, and diplomacy, with particular attention to transnational developments, the emergence of new forms of identity, and the role of outside powers.

HIST 3421. History of Western Science to the Scientific Revolution. 3 hours.
The history of early science beginning with some major ancient and medieval natural philosophers and historians, and ending with the Scientific Revolution of the 1500s and 1600s, which decisively shaped western civilization.

HIST 3432. History of Western Science Since the Scientific Revolution. 3 hours.
A continuation of the survey of the history of science, from the culmination of the Scientific Revolution in the 1600s to the twentieth century, considering science and scientific ideas in relation to broader social, religious, and intellectual issues.

HIST 3433. History of Medicine. 3 hours.
The history of medicine in Western society. The impact of epidemic disease, concepts of illness, medical therapies, types of practitioners and their education, and public health.

HIST 3443. Spain in the Age of Cervantes. 3 hours.
The history of Imperial Spain in the time of Miguel de Cervantes (1547-1616). Topics of discussion will include the Armada of 1588, heresy and the Inquisition, art and artists, the discovery of the New World, and perspectives on the decline of Spain.

HIST (AFST) 3500. Seventeenth Through Nineteenth-Century Southern Africa. 3 hours.
Social, political, and economic changes in southern African societies (South Africa, Namibia, Lesotho, Botswana, Swaziland, Zimbabwe, and Mozambique) as they assimilated non-African peoples, their ideas, and material culture. Independent, viable and adaptable, Africans engaged Portuguese, British, Boers, and Germans as they competed for land, cattle, and trade.

HIST (AFST) 3511. East Africa to the Nineteenth Century. 3 hours.
Economic, political, and cultural history of East Africa to the nineteenth century. Growth of agricultural systems, forms and functions of states and kingdoms, the world of the Indian Ocean, slavery and rebellion.

HIST (AFST) 3512. East Africa in the Nineteenth and Twentieth Centuries. 3 hours.
Economic and cultural history of East Africa in the nineteenth and twentieth centuries. Food, trade, commodification, slavery, rage, missionary and colonial interests, nationalisms, independence, art and literature.

HIST 3530. Women in Sub-Saharan Africa. 3 hours.
Women's social, economic, spiritual, and political contributions to African history from precolonial to contemporary times. Emphasizing African women, it also addresses European and Asian women immigration. Women's interpretations of their identities, social worlds, and experiences, recognizing their essential role in African societies.

HIST 3562. The Middle East From 1453 to 1918. 3 hours.
The history of the Middle East from 1453 to 1918, focusing on the Ottoman Empire and its provinces.

HIST 3570H. Religion, Nationalism, and Revolution in the Middle East, 1900 to the Present (Honors). 3 hours.
Not open to students with credit in HIST 3560.
Prerequisite: Permission of Honors.
Evolution of religious, nationalist, and cultural identities in the region of the Modern Middle East and their contribution to political revolutions throughout the twentieth century.

HIST 3580. Egypt: Mother of Civilization. 3 hours.
Political and cultural history of Egypt from the medieval era up to the present. Examining the history of education in Egypt, Egyptian women, the growth of feminism, and Cairo as an international metropolis, with a look at Egypt's experiences with colonialism and relationship with the rest of Africa, particularly Sudan.

HIST 3601. Premodern Japan: Foundations of Culture and State. 3 hours.
Ancient and medieval Japan, focusing on the institutional and cultural foundations of the Japanese state.

HIST 3602. Modern Japan: From Shogun to Superpower. 3 hours.
Early modern and modern Japan: the transformation of Japan from an isolationist, agrarian country to a military giant, to a broken and defeated nation, to an economic superpower.

HIST 3661. History of China I: Traditional China. 3 hours.
Traditional, intellectual, political, economic, social, literary, religious, and diplomatic developments up to Sung dynasty. Influences of Confucianism, Daoism, and Buddhism on identity; development and influence of "Zhung-Guo" (Central Kingdom); trade-tribute concepts on political and economic institutions; the importance of growth of family system/gender views on social institutions.

HIST 3662. History of China II: Transitional China. 3 hours.
Internal/external influences that challenge traditions and cause important changes. Influences of nomadic invaders— Mongols/Manchus, on social and political history, of Buddhist/Daoist influences on Neo-Confucianism; of impact of Christian missionaries/western merchants on modifications of political and economic institutions.

HIST 3663. History of China III: Revolutionary China. 3 hours.
End of nineteenth through the twentieth century; focusing on the Republic of China, its establishment, development, and troubles; rise of Nationalism/Communism; establishment, development, and troubles of the People's Republic of China. Revolutions; the leaders of them, and their important ideas and impact.

HIST 3670H. Introduction to Chinese Civilization (Honors). 3 hours.
Prerequisite: Permission of Honors.
Major sources, ideas, and institutions of Chinese tradition.

HIST 3680H. Communist China (Honors). 3 hours.
Prerequisite: Permission of Honors.
The rise of Communism in China. The collapse of the "old order," Marxism and Maoism, the Chinese Civil War, the establishment of the PRC, the Great Leap Forward, the Great Proletarian Revolution, the Deng Xiaoping era, among other topics.

HIST 3720H. Seminar in Comparative History (Honors). 3 hours.
Prerequisite: Permission of Honors.
An undergraduate research seminar focusing on topics from a comparative perspective.

HIST 3751. War and Society to 1600. 3 hours.
The history of warfare in the ancient and medieval worlds. Focuses on the interdependent, causal relationship between the structures and sources of political power, the objectives and purposes of warfare, the composition and organization of military forces, and the tactics and equipment of war.

HIST 3752. War and Society Since 1500. 3 hours.
The history of warfare in the context of the warring societies from 1500 to the present in world history.

HIST 4000/6000. Studies in American History. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Junior or senior standing.
A special subject not otherwise offered in the history curriculum. Topics, methodology, and instructors vary from semester to semester. Normally, no more than two such courses may be counted toward the major or the minor in history, exceptions being made only by the Coordinator of Instruction.

HIST 4030/6030. Politics of Morality in the United States. 3 hours.
Origin of selected political and moral dilemmas in American multicultural contexts from the Colonial to the Contemporary period.

HIST 4040/6040. Working Class America. 3 hours.
Using fiction and film as well as traditional texts, the history of working-class women and men in the United States. The emphasis will be on the everyday lives of the laborers—what they did at work and at home, in the union hall, and on the picket line.

HIST 4050/6050. American Lives. 3 hours.
Repeatable for maximum 6 hours credit.
Biographies and autobiographies to explore a variety of themes and issues in American history. Emphases will differ depending on instructor: focus may be nineteenth century, twentieth century, women, race, southern autobiography, etc.

HIST(AFAM) 4055/6055. Historical Survey of African American Thought. 3 hours.
This course examines representative works of such nineteenth- and twentieth-century social, cultural, and political thinkers as Frederick Douglass, Cornel West, Anna J. Cooper, and Angela Davis among other outstanding women and men who have contributed significantly to the intellectual life of the African American community.

HIST 4060/6060. American Legal History. 3 hours.
American legal thought, institutions, and education, focusing on the impact of social, political, and economic forces on the legal system. The English background, colonial period, legal foundations of the new nation, and the nineteenth and twentieth centuries.

HIST 4067/6067. History of American Technology. 3 hours.
Prerequisite: HIST 2111 or HIST 2112.
The history of technology in the United States from the pre-colonial era until the present, with a focus on the social and cultural histories of technology.

HIST 4070/6070. Jeffersonian and Jacksonian America. 3.0 hours.
History of the U.S. from the early republic through the antebellum period, with emphasis on territorial expansion, industrialization, the first and second political systems, and the emergence of the sectional crisis.

HIST 4071/6071. Antebellum South. 3 hours.
A chronological and thematic history of the South from Spanish exploration and Jamestown's settlement through the secession crisis of 1860-1861, with an emphasis on the social, cultural, economic, and political aspects of southern life in the colonial and antebellum periods.

HIST 4072/6072. The Civil War Period of American History. 3 hours.
The origin, conduct, and legacy of the war and the impact of the conflict upon peoples and institutions.

HIST 4073/6073. The Era of Reconstruction, 1865-1877. 3 hours.
The process of reunion, especially in the American South, with emphasis upon the experience of African Americans.

HIST 4074/6074. The South Since Reconstruction. 3 hours.
Economic, social, cultural, and political developments in the South since Reconstruction.

HIST 4075/6075. Scientific Interests in the South. 3 hours.
Scientific inquiry in the southeastern region of the United States. Stresses cultural and intellectual milieu, examines special role of natural history, and compares inquiries of southern scientists with those of other contemporary United States scientists.

HIST 4080/6080. Politics of Gender in United States History. 3 hours.
Representations of women's power historically, evaluated critically in terms of gender, race, and class.

HIST 4091/6091. Problems in American Foreign Policy, 1776-Present. 3 hours.
Selected problems related to United States foreign policy.

HIST 4092/6092. The United States in the Era of the Cold War. 3 hours.
The political, diplomatic, military, and social history of the United States during the era of the Cold War (1946-1992).

HIST 4094/6094. The Vietnam War. 3 hours.
The political, military, and diplomatic aspects of the Vietnam War, from the French involvement in the 1940s and 1950s to the United States departure in 1973 and the fall of Saigon in 1975.

HIST 4100/6100. History of Georgia. 3 hours.
Using historical scholarship, biography, and film, the Georgia past from pre-history to the present. Themes of race, class, and modernization in the development of Georgia; special emphasis on the lives of everyday Georgians at various points in history.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

HIST 4110/6110. Multicultural Georgia. 3 hours.
The history of the state, with an emphasis on its racial, ethnic, religious, gender, and regional diversity, to be examined through historical documents, novels, short stories, folklore, memoirs, music, and film.

HIST 4110H. Multicultural Georgia (Honors). 3 hours.
Not open to students with credit in HIST 4110/6110.
Prerequisite: Permission of Honors.
This course is designed to introduce students to the racial, ethnic, cultural, and regional diversity of Georgia. We will use both chronological and thematic approaches to explore Native Americans, Spanish explorers, the multi-ethnic origins of Savannah (Moravian, Salzburger, Jewish); black-white relations from slavery through civil rights; Appalachian culture; the urban Jewish experience, recent Latino immigration, etc.

(HIST)ESOC 4150/6150. Teaching United States History. 3 hours.
Classic historiography and current debates among historians over major themes and events in United States history. Examination of ways in which this historical scholarship can be incorporated into social studies teaching. Evaluation of materials and methods used to teach United States history in secondary and middle schools.

HIST 4200/6200. Studies in Latin American History. 3 hours. Repeatable for maximum 9 hours credit.
Special issues or topics in Latin American history not covered in a regular history course. Topics, methodology, and instructor vary from semester to semester. Representative topics include the Latin American revolutionary tradition, the wars of independence in the Americas, and Latin American wars.

HIST 4210/6210. Latin America: A Socioeconomic History Since 1930. 3 hours.
Latin American social and economic development from the onset of the Depression until the present. The role of the state in economic development; the impact of modernization on traditional social systems; persistence of social inequity amidst development; and the liberal and revolutionary responses to social needs.

HIST 4220/6220. The United States and Latin America. 3 hours.
The political, economic, and cultural relations between the United States and Latin America from 1776 to the present. Spanish-American revolutions, the Monroe doctrine, United States expansionism, the Pan American system, United States intervention, the Good Neighbor policy, Latin America in the Cold War, and United States and Latin American revolutions.

HIST(CLAS) 4225/6225. Medicine, Healing, and the Body in Ancient Greece and Rome. 3 hours.
The origins of the rationalist tradition in medicine; folk and cult methods of healing; the medical construction of gender differences; attitudes toward the body, including asceticism; and topics in the social history of medicine (such as childbirth, disease, and medical society) will be explored.

HIST 4300/6300. Studies in European History. 3 hours.
Topical studies that vary by year and instructor. Topics might include "Art and Society in the Age of the Reformation," "War and Gender in Twentieth-Century Europe," "Society and Culture in the Medieval European City," and "Imperialism and Anti-imperialism in Modern Europe."

HIST(CLAS) 4312/6312. The Hellenistic World. 3 hours.
Problems in Hellenistic history from 330 B.C. to the Roman conquest with emphasis on the Antigonid, Seleucid, and Ptolemaic dynasties.

HIST(CLAS) 4320/6320. Law and Society in the Greco-Roman World. 3 hours.
Law and its functions in ancient society from archaic Greece through the fifth century A.D. Includes discussion of Greek, Roman, and Christian legal codes, legal procedure, and the theory of law; also of law as a source for social history, especially issues of gender, class, crime, and the ancient economy.

HIST(CLAS) 4321/6321. The Roman Republic. 3 hours.
Roman history to the end of the republic.

HIST(CLAS) 4322/6322. The Roman Empire. 3 hours.
History of the Roman Empire from 27 B.C. to A.D. 337 with special emphasis on the government of Augustus, reasons for its decline, and the final attempt at unification of the empire under Constantine.

HIST(CLAS) 4329/6329. Studies in Ancient Greek and Roman History. 3 hours. Repeatable for maximum 6 hours credit.
Undergraduate prerequisite: Junior or senior standing.
Topics in ancient history that vary by year and instructor. Subject matter may include, for example, "The Hellenistic World"; "The Social History of the Roman Empire"; "Late Antiquity."

HIST 4330/6330. Institutions of the Medieval West. 3 hours.
A variety of specific topics in medieval history, such as law and justice, Anglo-Saxon England, politics of the family, and attitudes toward gender and sexuality.

HIST 4340/6340. Rebirth and Reinvention in Early Modern Europe. 3 hours.
European society in the context of pivotal social, political, and intellectual moments, from the growth of the Humanist movement to the military revolution. The goal is a better understanding of "turning points" in history, and their creation and definition.

HIST 4350/6350. Material Culture and Consumer Society in Early Modern Europe. 3 hours.
Examines the origins of modern consumerism by looking at production and consumption in preindustrial Europe. Treats the circulation, possession, and meaning of goods such as clothes, food, books, and objects of art. Themes include consumption as a sign of social status, popular and learned attitudes toward markets, and luxury.

HIST 4360/6360. European Popular Culture. 3 hours.
The symbols, expressions, and entertainments that all Europeans drew upon from the wealthiest and best educated to the poorest and illiterate. Themes may include material culture, gender identities, folktales, reading practices, religion and worship, music and theatre. Taught as a seminar with extensive readings in primary and secondary sources.

HIST 4371/6371. The Medieval Mind. 3 hours.
The intellectual history of medieval Europe. The nature of Christian behavior will be examined in the development of premodern ideas on the human body, politics, law, and religion.

HIST 4372/6372. Intellectual History in Early Modern Europe. 3 hours.
The intellectual heritage of early modern Europe. Students will study the works of humanists, theologians, and philosophers, as well as evaluate the social context in which those works were produced.

HIST 4373/6373. Nineteenth-Century European Intellectual History. 3 hours.
European thought from 1815-1914, with emphasis on the relationship between ideas and their political and social context.

HIST 4374/6374. Intellectual History of Twentieth-Century Europe. 3 hours.
Major trends and innovations in European intellectual life, from the fin-de-si'ecle revolt against positivism to post-structuralism and its critics. Coverage will include such thinkers as Freud, Weber, and Foucault, as well as such wider cultural movements as futurism, surrealism, and existentialism.

HIST 4375. The Golden Age of European Natural History. 3 hours.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L or BTNY 1220 and BTNY 1220L.
The discoveries, controversies, and speculation in eighteenth and nineteenth-century zoology, botany, and paleontology that profoundly shaped western thought about humans and nature.

HIST 4381/6381. Politics, Culture, and Society in Stuart England. 3 hours.
Religious, political, and cultural upheavals under the Stuart monarchs, 1603-1704.

HIST 4382/6382. Britain from the Age of Revolution to the Age of Victoria 1780-1900. 3 hours.
Britain in the age of the American War of Independence, the French Revolution, and the Industrial Revolution. Special attention will be paid to political culture, intellectual change, and economic development.

HIST 4383/6383. Britain 1901 to the Present. 3 hours.
Political culture, intellectual change, and economic/imperial readjustment in twentieth-century Britain and beyond.

HIST 4385H. Nuclear Culture: Images, Attitudes, Controversies. 3 hours.
An exploration of the cultural understanding of applied nuclear science in the years since 1895. Using film, fiction, popular science, and the press, the course ranges beyond North America to Europe and Asia as well.

HIST 4391/6391. The French Revolution and the First Empire. 3 hours.
The causes and course of Europe's first modern revolution and its reconfiguration by Napoleon Bonaparte. Students will read primary sources and a rich contemporary historiography which illuminate official and popular efforts to reshape government, society, and culture. Taught as a seminar with extensive readings.

HIST 4392/6392. Twentieth-Century France. 3 hours.
The history of France in the twentieth century, with an emphasis on politics and social change.

HIST 4400/6400. The Age of World Wars I and II. 3 hours.
The origins, course, nature, and consequences of World Wars I and II in Europe, 1870-1950.

HIST 4410/6410. Nazism and Fascism in Europe, 1919-1945. 3 hours.
The two totalitarian movements, Italian Fascism and German National Socialism (Nazism), emphasizing the intellectual origins of antidemocratic impulses before and after 1919, the unique social and political factors present in each nation, the personalities of Hitler and Mussolini, and the growth of the totalitarian one-party state.

HIST 4413/6413. Race, Nation, and Empire in the Former Soviet Union. 3 hours.
A topical seminar in Russian and Soviet history to consider issues of ethnicity and nationality since the nineteenth century. Students read both secondary and primary accounts (in translation) to understand the development, variety, and significance of ethno-national forms of identity in the tsarist, Soviet, and post-Soviet states.

HIST 4420/6420. Holocausts in History. 3 hours.
The Jewish Holocaust 1933-1945, emphasizing historical precedents and consequences. Traditional religious anti-Semitism, biologically-based racism, and extreme nationalism will be investigated as sources of modern genocidal behavior.

(HIST)ANTH 4470/6470. The Rise and Fall of the Southeastern Chiefdoms. 3 hours.
Development of the native societies of the southeastern United States, the exploration of the area by Spain in the sixteenth century, and the consequences of the meeting of the two peoples.

(HIST)ANTH 4480/6480. The Indians of the Old South. 3 hours.
Social history of the native peoples of the southern United States from the beginnings of the Spanish missions and the English deerskin and slave trade through Indian removal.

HIST 4500/6500. Studies in African or Middle Eastern History. 3 hours.
Topics in modern and ancient Middle Eastern or African history. Non-traditional methodologies and sources are combined to introduce students to emerging issues in African or Middle Eastern history.

HIST 4510/6510. History of Famine and Food Systems in Africa. 3 hours.
African agricultural achievement, theories of production and famine systems, and attempts by colonial and international capital to control African food systems. Literature is a major source.

HIST 4530/6530. The History of Orientalism. 3 hours.
Images and symbolism used by Europeans and Americans to define the Islamic Middle East. The history of the Middle East through representation—stereotypes, myths, fairy tales, novels, films, and news coverage—particularly the ramifications of these images on Western foreign policy towards the Islamic Middle East.

HIST 4540/6540. Conflict in Twentieth-Century Southern Africa. 3 hours.
South Africa's economic, political and military might has shaped other southern African societies (Namibia, Lesotho, Botswana, Swaziland, Zimbabwe, and Mozambique) in the twentieth century. Reform and revolution which Africans and Europeans employed to regain and maintain African independence in the region.

HIST 4550/6550. Christianity and Colonialism in Africa. 3 hours.
Christianity was both ally and adversary to colonialism, threatening African "tradition" and aiding a vocal westernized elite which shaped independent African nations. African initiatives in Christian conversion, colonial Christianity, Africans in mission communities, mission education and westernized elites, independent African religious movements, and Christianity and African nationalism.

HIST 4600/6600. Studies in Asian History. 3 hours. Repeatable for maximum 9 hours credit.
A special issue or topic not otherwise offered in the history curriculum. Topics, methodology, and instructors will vary from semester to semester. Representative topics include "Japan and the Samurai," "Women, Gender and Family in Traditional Japan," and "Court and Countryside in Japan's Golden Age."

HIST 4700/6700. Themes in Comparative History. 3 hours.
A special subject not otherwise offered in the history curriculum. Topics, methodology, and instructors vary from semester to semester.

HIST 4750/6750. History and Film. 3 hours.
We are living in a post-literate age. Most people now get their history from films instead of books. How film, using a different vocabulary than that of books, recreates the past.

HIST(PHIL) 4860/6860. History, History of Philosophy, Philosophy. 3 hours.
Historians and philosophers differ in the source of evidence and arguments they use and in the standards to which they appeal. Nonetheless, works in each of these fields raise questions relevant to the other field. The purpose of this course is to explore the main relationships between these two fields.

(HIST)EDHI 4900/6900. History of American College and University. 3 hours.
Prerequisite: HIST 2111 and HIST 2112.
History of American colleges and universities from 1619 to the present. Major topics include student

life, European antecedents, the nature of the university, the impact of religion, the rise of athletics, the culture of collegiate life, and the influence of society.

HIST 4960H. Directed Readings and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HIST 4960/6960. Directed Readings in History. 3 hours. Repeatable for maximum 6 hours credit.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HIST 4970H. Directed Readings and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HIST 4980H. Directed Readings and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

HIST 4990. Senior Seminar in History. 3 hours.
The methods of historical research and writing as well as a brief study of the philosophy of history and historiography. The student must write a satisfactory formal paper.

HIST 4990H. Honors Thesis. 3 hours.
Not open to students with credit in HIST 4990.
Prerequisite: Permission of Honors.
Individual research in the field of his/her major or in a closely related field.
Non-traditional format: Thesis course.

(HNDI) Hindi

College of Arts and Sciences, Department of Comparative Literature

HNDI 1001. Elementary Hindi I. 4 hours.
An introductory course in Hindi covering the fundamentals of Hindi pronunciation, reading, writing, and grammar.

HNDI 1002. Elementary Hindi II. 4 hours.
Prerequisite: HNDI 1001.
A continuation of the introductory course in Hindi. Fundamentals of Hindi pronunciation, reading, writing, and grammar.

HNDI 2001-2001L. Intermediate Hindi. 4 hours.
Prerequisite: HNDI 1002.
This is the intermediate level of Hindi. It will build on the basic reading, writing, grammar, and speaking skills acquired in the introductory course.

HNDI 2002. Intermediate Hindi. 3 hours.
Prerequisite: HNDI 2001-2001L.
Intermediate Hindi will cover select grammatical constructions, advanced vocabulary and excerpts from Hindi literature to promote reading and speaking proficiency.

(HONS) Honors

Honors Program

HONS 1000H. Introduction to Honors. 1 hour.
Prerequisite: Permission of Honors.
Introduction to the Honors Program and the University for new freshmen. Includes overviews of University and Honors requirements, computer resources, library resources, student services, advising and registration procedures.
Non-traditional format: Will meet two hours per week for 7 weeks plus additional excursions.

HONS(FRES) 1990H. Honors Colloquia Seminar. 1 hour. Repeatable for maximum 4 hours credit. 1 hour lecture and 1 hour lab per week.
Prerequisite: Permission of Honors.
Attendance at University-sponsored lectures, symposia, colloquia, distinguished speaker series, and follow-up seminar meetings. Students will present written reports on lectures and discuss in seminars.

HONS(CMLT) 2010H. Honors Humanities. 6 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of Honors.
Concepts integrating literature and the fine arts through lectures, seminars, individual research or projects, and writing.
Non-traditional format: Discussion sections will include writing and critiquing papers, and student presentations. May be offered daily during May session, or as part of a Study Abroad program.

HONS(CMLT) 2020H. Honors Humanities. 6 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of Honors.
Concepts integrating literature and the fine arts through lectures, seminars, individual research or projects, and writing.
Non-traditional format: Discussion periods include writing and critiquing papers, and students presentations.

HONS(ANTH) 2040H. Honors Social Sciences. 6 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: ENGL 1101 and permission of Honors.

Concepts integrating history, government, and the social and behavioral sciences through lectures, seminars, individual research or projects, and writing.
Non-traditional format: Discussion periods include writing and critiquing papers, and student presentations.

HONS(ANTH) 2050H. Honors Social Science. 6 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: ENGL 1101 and permission of Honors.
Concepts integrating history, government, and the social and behavioral sciences through lectures, seminars, individual research or projects, and writing.
Non-traditional format: Discussion periods include writing and critiquing papers, and student presentations. May be offered daily during May session, or as part of a Study Abroad program.

HONS(BIOL)(CHEM)(GEOL)(PHYS) 2070H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in PHYS 1010 or CHEM 1110.
Prerequisite: (ENGL 1101 or MATH 1101) and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Occasional weekend field trips required.

HONS(BIOL)(CHEM)(GEOL)(PHYS) 2080H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in BTNY 1220 or BTNY 1220L or GEOL 1121.
Prerequisite: HONS(BIOL)(CHEM) (GEOL) (PHYS) 2070H and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Weekend field trips required.

HONS(CMLT) 3010H. Honors Research Methods. 1-3 hours.
Prerequisite: Permission of Honors.
Research methods in the Arts and Humanities to enhance directed study participation and Honors thesis/project preparation.
Non-traditional format: Weekly seminars focus on individual student research designs. May be held during May session as daily seminars.

HONS(PSYC) 3040H. Honors Research Methods. 1 hour.
Prerequisite: Permission of Honors.
Research methods in the Social and Behavioral Sciences to enhance directed study participation and Honors thesis/project preparation.
Non-traditional format: Weekly seminars focus on individual student research designs. May be held as daily seminars during May session.

HONS(GEOL) 3070H. Honors Research Methods. 1-3 hours.
Prerequisite: Permission of Honors.
Research methods in the natural sciences to enhance directed study participation and Honors thesis/project preparation.
Non-traditional format: Weekly seminars focus on individual student research designs. May be held as daily seminars during the May session.

HONS 4000H. Honors Peer Advising. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of Honors.
Honors students who have trained as peer advisors will supervise the freshman seminars, lead discussions and campus field trips, and work with the faculty advisor in the design and implementation of the freshman seminars.
Non-traditional format: Students will be on call for freshmen in their seminar. They will do significant training and planning prior to the semester in which they register. The classes will meet for two hours per week for the first half of the semester.

HONS(CMLT) 4010H. Special Problems Seminar in Humanities. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the Humanities which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

HONS(CMLT) 4020H. Special Problems Seminar in Humanities. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the Humanities which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

HONS(ANTH) 4040H. Special Problems Seminar in Social and Behavioral Sciences. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the social and behavioral sciences which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during the May session, or as part of a Study Abroad program.

HONS(ANTH) 4050H. Special Problems Seminar in Social and Behavioral Sciences. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the social and behavioral sciences which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

HONS(GEOL) 4070H. Special Problems Seminar in the Natural Sciences. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the natural sciences which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

HONS(GEOL) 4080H. Special Problems Seminar in Natural Sciences. 3 hours. 3 hours lab per week.
Prerequisite: Permission of Honors.
Selected problems in the natural sciences which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.
Non-traditional format: Discussions include student presentations of material researched for the course. May be held daily during May session, or as part of a Study Abroad program.

HONS 4960H. Honors Undergraduate Research. 1-4 hours.
Prerequisite: Permission of Honors.
Individual research and/or readings with a faculty member. Will be taught by Honors faculty.
Non-traditional format: May be offered off campus. Meeting schedule determined by faculty member and student.

HONS 4970H. Honors Undergraduate Research. 1-4 hours.
Prerequisite: Permission of Honors.
Individual research and/or readings with a faculty member. Will be taught by Honors Faculty.
Non-traditional format: May be offered off campus. Course proposal is designed by faculty and student. Meeting schedule determined by faculty member and student.

HONS 4980H. Honors Undergraduate Research. 1-4 hours.
Prerequisite: Permission of Honors.
Individual research and/or readings with a faculty member.
Non-traditional format: May be offered off campus. Course designed by faculty and student. Meeting schedule determined by faculty member and student. Will be taught by Honors faculty.

HONS 4990H. Honors Thesis. 1-4 hours.
Prerequisite: Permission of Honors.
Honors thesis or final project under the direction of a faculty member. The course will be taught by Honors faculty.
Non-traditional format: May be offered off campus.

(HORT) Horticulture

College of Agricultural and Environmental Sciences, Department of Horticulture

HORT 2000. Horticultural Science. 3 hours.
Horticultural science, the biology of horticulture, the technology of crop production and marketing, production systems, aesthetics, and crop types.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

HORT 2100. Horticultural Professionalism. 1 hour.
Not open to students with credit in HORT 4000.
Professional behavior, resume writing, interviewing, and student oral presentations on horticultural topics.

HORT 3010. Introduction to Vegetable Crops. 2 hours. 3 hours lecture per week.
Prerequisite: (BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L or BTNY 1210-1210L
Botany, general culture, and use of major vegetable crops.
Non-traditional format: Class will be taught in tandem with Introduction to Fruit Crops spring semester. Introduction to Vegetable Crops will be taught the first eight weeks of the semester and Introduction to Fruit Crops will be taught the last seven weeks of the semester. Lectures will be three hours per week and significant outside work will be

given to compensate for the reduced number of lecture hours.

HORT 3020. Introduction to Fruit Crops. 2 hours. 3 hours lecture per week.
Prerequisite: (BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L).
Botanical description, geographic distribution, general culture, and culinary uses of the world's major fruit crops.
Non-traditional format: Class will be taught in tandem with Introduction to Vegetable Crops spring semester. Introduction to Vegetable Crops will be taught the first eight weeks of the semester and Introduction to Fruit Crops will be taught the last seven weeks of the semester. Lectures will be three hours per week and significant outside work will be given to compensate for the reduced number of lecture hours.

HORT 3140. Interior Plantscapes. 2 hours.
Growth, installation, care, and use of indoor plants.

HORT 3300. Organic Gardening. 2 hours.
Prerequisite: (BIOL 1103 and BIOL 1103L) or BTNY 1210 and BTNY 1210L.
History, principles, production practices, and marketing of organically-grown horticultural crops.

HORT(BTNY)(ANTH) 3440. Herbs, Spices, and Medicinal Plants. 2 hours.
Historical and contemporary significance of herbs, spices, and medicinal plants in human culture and commerce; chemical and biological characteristics; commercial production techniques; application in modern and traditional medical systems.

HORT(LAND) 3450. Residential Design. 3 hours. 2 hours lecture and 2 hours lab per week.
Use and selection of plants for environmental design.

HORT 3500-3500L. Herbaceous Perennials I. 2 hours. 2 hours lecture and 4 hours lab per week.
Identification and environmental needs of herbaceous perennials.
Non-traditional format: Class taught for first half of fall semester. Students will spend time on their own visiting gardens to study plants.

HORT 3510-3510L. Herbaceous Perennials II. 2 hours. 2 hours lecture and 4 hours lab per week.
Identification and environmental needs of herbaceous ornamental perennials.
Non-traditional format: Class will be taught during last seven weeks of spring semester. Students will visit gardens on their own time to learn plants.

HORT 3620-3620L. Plant Propagation. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: (BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L).
Principles and practices for increasing plant numbers with emphasis on the anatomical and physiological basis for various methods.

HORT 3630-3630L. Nursery Management. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: (BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L).
Locating, operating, and managing retail and wholesale nurseries.

HORT 3700. Systematics of Woody Landscape Plants I. 3 hours. 2 hours lecture and 2 hours lab per week.
Identification, ornamental characteristics, culture, propagation, and landscape uses of woody ornamental plants. Emphasis on shade trees and needled evergreens.

HORT 3720. Woody Landscape Plant Identification and Use. 4 hours. 2 hours lecture and 4 hours lab per week.
Prerequisite: HORT 2000 or BIOL 1103 or BTNY 1210.
Identification and use of woody plants in the landscape.

HORT 3910. Horticulture Internship. 3 hours.
Practical work experience in the operations and management of horticultural enterprises.
Non-traditional format: At least twenty hours of work per week for ten weeks.

HORT 4010/6010-4010L/6010L. Olericulture. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: HORT 3010.
Current cultural practice of and environmental influence on vegetable crop production.

HORT 4020/6020-4020L/6020L. Pomology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: HORT 3020 or permission of department.
Culture and management of orchard crops, including site selection, cultivar and rootstock selection, pruning and training, propagation, integrated pest management, physiology of flowering and fruiting, harvest and postharvest procedures. Laboratory provides hands-on experience pruning, training, and budding trees, and using/calibrating equipment needed for managing orchards.

HORT 4050/6050. Greenhouse Management I. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: (BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L).

Principles and practices of the production of greenhouse pot plants, bedding plants, and cut flowers. Emphasis placed on production practices, environmental and operational management, and cost estimation.

HORT 4060/6060. Greenhouse Management II. 3 hours. 2 hours lecture and 2 hours lab per week.
Undergraduate prerequisite: (BIOL 1103 and BIOL 1103L) or BTNY 1210 and BTNY 1210L.
Study of commercial greenhouse crop production practices with special emphasis on pot plant production techniques, plant nutrition, fertilizers, and use of growth regulators. Student will be responsible for the culture of a greenhouse crop.

HORT 4070/6070. Special Problems in Horticulture I. 1-5 hours.
Research on special problem under direction of faculty.
Non-traditional format: As arranged under the direction of faculty.

HORT 4080/6080. Special Problems in Horticulture II. 1-5 hours.
Advanced research on problem of special interest under direction of faculty.
Non-traditional format: As arranged under the direction of faculty.

HORT 4090. Landscape Management. 4 hours. 3 hours lecture and 2 hours lab per week.
Landscape installation, maintenance, estimating, and contracts.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

HORT 4110/6110. Plant Nutrition. 3 hours.
Prerequisite: CRSS 3050-3050L or CRSS(FORS) 3060-3060L.
Mineral nutrition of higher green plants.

HORT 4210/6210. Postharvest Physiology of Horticultural and Agronomic Crops. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: [(BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L or (BTNY 1210 and BTNY 1210L)] and CHEM 1211.
Catabolic and anabolic metabolism, and anatomical and pathological responses of harvested fruits, vegetables, nuts, seeds, cut flowers, and intact plants. Transportation, refrigeration, controlled atmospheric storage, drying, and packaging of harvested products.

HORT 4440/6440-4440L/6440L. Environmental Physiology in Horticulture. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in BTNY 4850/6850-4850L/6850L or BTNY 8890-8890L or CRSS 3300.
Prerequisite: (BIOL 1103 and BIOL 1103L) and (BIOL 1104 and BIOL 1104L) or (BIOL 1107-1107L and BIOL 1108-1108L) or (BTNY 1210 and BTNY 1210L and BTNY 1220 and BTNY 1220L).
Effects of environmental factors on growth and physiology of horticultural plants and modification of the plant's environment to improve crop production.

HORT 4700/6700. Horticultural Practicum. 3 hours.
Prerequisite: Permission of department.
Tours and discussion of horticultural enterprises in Georgia. Prepares students for presenting horticultural programs and conducting research to address industry problems.
Non-traditional format: Lectures and discussions will occur at industry venues.

HORT 4890/6890. Biodiversity and the World's Food Crops. 3 hours.
Molecular, organismal, ecological, and sociocultural aspects of biodiversity. Independent research project required.

(HORT)(ANTH)CRSS(ECOL)(GEOG) 4930/6930. Agriculture and Ecology in Tropical America. 3 hours.
Prerequisite: Permission of department.
Crops and cropping systems in tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture, on the ecosystems of the region.

(HORT)(ANTH)CRSS(ECOL)(GEOG) 4931/6931. Agriculture and Ecology in Tropical America Field Trip. 3 hours. Repeatable for maximum 9 hours credit. 48 hours lab per week.
Not open to students with credit in CRSS (ANTH)HORT 4940/6940.
Prerequisite: CRSS (ANTH)(ECOL)(GEOG) (HORT) 4930/6930 or permission of department.
Intensive field study in a tropical Latin American country; crops and cropping systems of tropical America; influences of geography, climate, and socioeconomic factors, as well as the impact of agriculture on the ecosystems of the region. Conducted in a tropical Latin American country.
Non-traditional format: Students will tour a tropical country and receive on-site instruction at a series of different farms and ecological preserves over a period of 18 days.

HORT 4990-4990D. Environmental Issues in Horticulture. 1 hour. 0-1 hour lecture and 0-1 hour discussion per week.
Prerequisite: Senior standing.
Environmental issues of concern to the horticulture industry. Discussion topics include water quality, water conservation practices, pesticides and

pest management practices, solid waste disposal and usage, the role of agriculture in global climate change.
Non-traditional format: One lecture or discussion per week.

(HPRB) Health Promotion and Behavior

College of Education, Department of Health Promotion and Behavior

HPRB 1190. Fundamentals of First Aid and Emergency Response. 2 hours.
Fundamentals of first aid, cardiopulmonary resuscitation (CPR), and general emergency response.

HPRB 1710. Health and Wellness. 3 hours.
Factors affecting the level of wellness of the individual are considered. Topics include mental health, nutrition, diet and weight control, physical fitness, smoking, human sexuality, consumer health, alcohol and other drugs, disease, environmental health, and injury prevention.

HPRB 1850. Contemporary Issues in Health. 2 hours.
Contemporary health problems facing individuals and society. Readings, classroom discussions, and activities challenge students' perspectives on health-related attitudes and practices within political, ethical, and economic contexts.

HPRB 2420. Health Education in Early Childhood Education. 2 hours.
Health education content, methods, and resources for early childhood teachers. Emphasis is on comprehensive school health education programs.

HPRB 3020. Introduction to Health Promotion and Education. 3 hours.
The philosophy and principles underlying the field of health promotion and education. Includes literature, research, organizations, scientific foundations, and employment potential.

HPRB 3150. Issues in Women's Health. 3 hours.
Contemporary issues that affect the health of women, including health status perspectives, preventive measures, health care alternatives, and special health concerns.

HPRB 3190. Advanced First Aid. 3 hours.
Problems and training in the aspects of comprehensive emergency medical care required at the scene of an injury or sudden illness.

HPRB 3210. Issues in Health Consumerism and Self-Care. 3 hours.
Health products and services and the factors that influence personal choices in the health marketplace. Includes a discussion of the philosophy, theory, and practice of self-care and health activism.

HPRB 3400. Basic Curriculum and Teaching Procedures in School Health Education. 4 hours.
Prerequisite: HPRB 1710 or permission of department.
Curriculum development within the preschool through 12th grade comprehensive school health education program; review of scope and sequence, content, resources, and materials; development of lesson plans including concepts and objectives; examination and application of various teaching methods; utilization of media, community resources, and assessment techniques.

HPRB 3450. Practicum in Health Education. 1-2 hours. Repeatable for maximum 3 hours credit.
Individual practical experience in health education within the school setting.
Non-traditional format: Observation and practical experience in the health education classroom. Most of the time is spent observing; however, the student may teach all or part of a class. Students also observe classroom and school management strategies. A written report of the experience is required.

HPRB 3460. Practicum in Health Promotion. 1-2 hours. Repeatable for maximum 3 hours credit.
Individual practical experience in health promotion and education in a community or worksite setting.
Non-traditional format: Observation and practical experience in a setting in the community such as a health department, hospital wellness center, or a corporate health promotion program. A written report of the experience is required.

HPRB 3700. Community Health. 4 hours.
Community health programs, including organizational structure of federal, state, and local health-related agencies. Also analysis of the interrelationship of political, social, and economic dimensions of community health including epidemiology.

HPRB 3750. Foundations of Injury Prevention. 3 hours.
The significance of injury as a health problem and the nature of injury prevention programs.

HPRB 4000/6000. Special Problems in Health Promotion and Behavior. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Independent study of selected topics.
Non-traditional format: Students develop a proposal for a learning experience that is not normally

available to them in a regular department course. The amount of work and/or the depth of inquiry depends on the number of credits the student desires. The proposal must be approved by the faculty member who is directing the project and by either the undergraduate or graduate coordinator.

HPRB 4400. Health Promotion Program Development. 4 hours.
Prerequisite: (HPRB 1710 and HPRB 3020) or permission of department.
Health promotion program development in community, worksite, and hospital settings. Emphasis given to program content, strategies, overall planning, and implementation. Topics include leadership, conflict resolution, communication, funding, marketing, and related professional issues pertaining to health promotion.

HPRB 4450/6450. Occupational Safety. 3 hours.
The specific areas and the broad scope in methods, materials, and problems in occupational safety programming with special emphasis on organization and implementation of injury prevention and control techniques.

(HPRB)SPCM 4610/6610. Health Communication. 3 hours.
Communication about health with physicians and other providers, within support groups and health care organizations, and by public figures, groups, and organizations.

HPRB 5060/7060. Educational Strategies in Human Sexuality. 3 hours.
Theory and practice of sexuality education; basic issues, philosophy, and guiding principles; legal implications; needs, justification, and objectives; curriculum critique for school and community programs; content knowledge, resource materials; acceptable methods to approach controversial topics.

HPRB 5160/7160. Special Topics in Health Promotion and Behavior. 1-3 hours. Repeatable for maximum 6 hours credit.
Selected health problems or issues, with emphasis on epidemiology, etiology, and the development and evaluation of prevention measures.
Non-traditional format: Format will generally be lecture and discussion.

HPRB 5210/7210. The Effects of Drug Use and Abuse. 3 hours.
Social, moral, psychological, and physiological causes and effects of drug use and abuse. Individual, family, and community factors related to prevention and treatment.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

HPRB 5460. Student Teaching in Health Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: HPRB 3400 and permission of department.
Practical experience in school health education through placement in a public school setting.
Non-traditional format: Undergraduate student teaching under the supervision of a certified teacher who has been approved by the department. Students meet with the student teaching coordinator on campus at least twice during the semester. Students develop a final professional portfolio as a result of their teaching experience.

HPRB 5560. Field Experience in Health Promotion. 1-12 hours. Repeatable for maximum 12 hours credit.
Prerequisite: HPRB 4400 and permission of department.
Practical experience in health education/promotion through placement in an appropriate community or worksite setting.
Non-traditional format: Community health field experience/internship under the supervision of a health professional who has been approved by the department. Student compiles a work "diary" and a portfolio of professional activities, and submits a final written report about the experience.

(ILAD) Institute for Leadership Advancement

Terry College of Business

ILAD 4100. Leadership, Personal Development, and Organizations. 3 hours.
Prerequisite: Admission into Leadership Scholars Program or enrollment in the ILA Leadership Certificate Program.
An in-depth self-examination of skills, personality, attitudes, and behaviors to increase self-awareness of leadership competencies. Students will also examine theories of leadership to develop insights for their personalized leadership development. Activities include individual assessments, a ropes course, personal leadership development plan, and learning journal.

ILAD 5000. Personal Career Management. 1 hour.
Prerequisite: ILAD 4100.
Job search issues and career and life planning. Assists students in making the transition from the academic community to the work environment. At the conclusion of the class, students should be better able to make decisions relating to their future career directions and successfully execute a self-directed job search.
Non-traditional format: The course will consist of

a one-hour session each week for the entire semester.

ILAD 5100. Leading from Within. 3 hours.
Prerequisite: Admission into Leadership Scholars Program or enrollment in the ILA Leadership Certificate Program.
Leadership as an inward and personal journey of service to others. Key leadership concepts are drawn from a variety of sources, including management, philosophy, psychology, literature, and the world's major spiritual traditions. The focus will be on learning the philosophy of the leader as servant and applying it through service-learning projects.

(INTB) International Business

Terry College of Business, International Business Programs

INTB 4800. Internship and/or Cooperative Education in International Business. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Internship or studies abroad program in the field of international business.
Non-traditional format: This course is designated as an internship and does not meet formally.

(INTS) Interdisciplinary Studies

College of Arts and Sciences

INTS 4990. Interdisciplinary Studies. 3 hours.
Prerequisite: Senior standing and permission of department.
Individual research or project in the major area of study. Required of all Interdisciplinary Studies majors.
Non-traditional format: Directed study.

(ITAL) Italian

College of Arts and Sciences, Department of Romance Languages

Certain courses in Italian are not open to native speakers. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was Italian.

ITAL 1001. Elementary Italian. 4 hours.
Not open to students with credit in ITAL 1002.
The Italian language and Italian speaking cultures. Emphasis is on conversational skills with attention to reading, writing, and listening comprehension. Fundamentals of Italian pronunciation and grammar. Work in the language laboratory.

ITAL 1002. Elementary Italian. 4 hours.
Not open to students with credit in ITAL 2001.
Prerequisite: ITAL 1001.
A continuation of Elementary Italian. Open only to students who took Elementary Italian or who have an appropriate placement score. Emphasis is on conversational skills with attention to reading, writing, and listening comprehension. Fundamentals of Italian pronunciation and grammar; study of Italian culture. Work in the language laboratory.

ITAL 2001. Intermediate Italian. 3 hours.
Not open to students with credit in ITAL 2002.
Prerequisite: ITAL 1002.
Practice in speaking, listening, reading, and writing Italian at the intermediate level. Study of Italian language and culture.

ITAL 2002. Intermediate Italian. 3 hours.
Not open to students with credit in ITAL 3010.
Prerequisite: ITAL 2001 or ITAL 2600.
A continuation of Intermediate Italian. Emphasis on strengthening the students' speaking, listening, reading, and writing skills at the intermediate level. Conversation, compositions, reading of texts, and grammar review.

ITAL 2500. Italian Culture. 3 hours.
Italian culture through literature, sociopolitical history, and the arts. Italian history in a specific period as seen through a study of these three areas. Development of an integrated approach to culture, literature, and language. Given in English. Course may be taken through UGA Studies Abroad program in Cortona.

ITAL 2600. Intensive Italian. 3 hours.
Prerequisite: Permission of department.
Conversational skills, reading, writing, and listening comprehension. Not open to native speakers. Not to be used to satisfy the undergraduate language requirement.

ITAL 2950. Study Abroad in Italian. 3 hours.
Prerequisite: Permission of department.
Italian language, literature, and culture course taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

ITAL 2960. Study Abroad in Italian. 3 hours.
Prerequisite: Permission of department.
Italian language, literature, and culture course taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

ITAL 2970. Study Abroad in Italian. 3 hours.
Prerequisite: Permission of department.
Italian language, literature, and culture course taught at study abroad programs of the University System

of Georgia and non-University of Georgia programs.

ITAL 3010. Italian Conversation and Composition. 3 hours.
Not open to students with credit in ITAL 4010.
Prerequisite: ITAL 2002.
The emphasis is divided between oral and written expression. Composition and conversation are integrated into the context of Italian culture. Given in Italian. Not open to native speakers.

ITAL 4010. Advanced Conversation and Composition. 3 hours.
Prerequisite: ITAL 3010.
The emphasis is divided between conversation and composition in order to promote students' abilities to express themselves accurately in both oral and written Italian. Activities are integrated into the context of Italian culture. Given in Italian. Not open to native speakers.

ITAL 4040/6040. Topics in Italian Cinema, Culture, and Literature. 3 hours.
Specific aspects of Italian cinema, culture, and literature. Topics to be selected according to the needs and interests of the students. Taught in seminar fashion with extensive outside readings of primary and secondary sources. Given in English.

ITAL 4050. Italian Literature and Culture from its Origins to 1400. 3 hours.
Prerequisite: ITAL 3010.
Selected poetry and prose from the Italian Middle Ages. Works include Dante's *Vita Nuova*, religious works by Umbrian writers, love poetry of the Scuola Siciliana and the Dolce Stil Novo, and narrative prose by Boccaccio, Marco Polo, et al. Given in Italian.

ITAL 4060. Italian Literature and Culture from 1400 to 1700. 3 hours.
Prerequisite: ITAL 3010.
Italian Renaissance and Baroque texts, selected from lyric poetry, the epic, the pastoral, the theater, treatises, scientific prose, family writings and letters. Works by Ariosto, Poliziano, Boiardo, Tasso, Lorenzo, Alberti, Machiavelli, Castiglione, Sannazaro, Marino, Michelangelo, Leonardo da Vinci, Galileo, Stampa, Firenzuola, et al. Given in Italian.

ITAL 4070. Italian Literature and Culture from 1700 to the Present. 3 hours.
Prerequisite: ITAL 3010.
Intensive reading and analysis of the major works of representative Italian writers and study of main literary movements in Italian literature from the eighteenth to the twentieth century. Given in Italian.

ITAL 4120/6120. Topics in Italian Culture, Language, and Literature. 3 hours. Repeatable for maximum 45 hours credit.
Prerequisite: ITAL 4010 or ITAL 4050 or ITAL 4060 or ITAL 4070.
Selected topics in Italian culture, civilization, language, literature, or literary theory. Given in Italian.

ITAL 4950. Directed Reading and/or Projects. 3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department and junior or senior standing.
Individual study, reading, or projects under the guidance of a faculty member.
Non-traditional format: Directed study.

ITAL 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and junior or senior standing.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

ITAL 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and junior or senior standing.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

ITAL 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and junior or senior standing.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

ITAL 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors and senior standing.
Individual research in the major field or in a closely related field.
Non-traditional format: Directed study.

(JOUR) Journalism

College of Journalism and Mass Communication, Department of Journalism

JOUR 3310. Introduction to Print Media. 3 hours.
Structure, operation, responsibilities, and influence of printed mass media from historical and descriptive perspectives. Attention is given to newspapers, magazines, books, news services, photojournalism, and new media technology and their relations to other mass media, government, and society.

JOUR 3410. News Writing and Reporting. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: Permission of department.
Techniques of basic news reporting and writing and an introduction to advanced practices, with practical assignments in the media.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

JOUR 3410H. News Writing and Reporting (Honors). 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in JOUR 3410.
Prerequisite: Permission of Honors.
Techniques, basic news reporting and writing and an introduction to advanced practices, including digital journalism.

JOUR 3510. Editing and Makeup. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: Permission of major.
Selection and preparation of written and pictorial material for newspapers and related media.

JOUR 3610. Introduction to Photojournalism. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: Permission of department.
Mass media photography, including camera use and digital image production.

JOUR 3710. Advanced Photojournalism. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: JOUR 3610 and permission of department.
Techniques, methods, and procedures in photojournalism that are used by newspapers, magazines, and other print media. Media photo assignments, picture editing, digital imaging, and publication techniques are used to create portfolios.

JOUR 5010. Media Internship. 3 hours.
Prerequisite: (JOUR 5300 or JOUR 5580/7580) and permission of department.
Supervised experience in print or electronic publishing.
Non-traditional format: Supervised experience forty hours a week.

JOUR 5170. Advanced Studies in Journalism. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: JOUR 3310 and permission of department.
Independent study or special projects in journalism for majors in journalism. Written proposal outlining the work to be undertaken must be submitted and receive the instructor's approval before the student will be permitted to register for the course. Students will be responsible for ensuring the funding of their projects.
Non-traditional format: This course is an independent study and has no lecture/lab hours.

JOUR 5300. Public Affairs Reporting. 3 hours.
Prerequisite: JOUR 3310 and JOUR 3510 and permission of department.
Advanced techniques in news reporting and writing, with special emphasis on practical assignments outside of class covering local government and specialized issues in such areas as business, science, the environment, and health.

JOUR 5350/7350. Advanced Newspaper Editing and Design. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: JOUR 3510 and permission of department.
Techniques of advanced newspaper editing and design, with emphasis on the visual aspects of newspaper editing.

JOUR 5360/7360. Advanced Magazine Editing and Design. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: JOUR 3510 and permission of department.
Planning, processing, and production of a magazine.

JOUR 5370. Documentary Photojournalism. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: JOUR 3710 and permission of department.
Documentary photojournalism and multi-picture reporting on in-depth subjects. Picture editing and management of visual departments are discussed and students are provided with practical experience in all of these areas.

JOUR 5410/7410. Journalism Ethics. 3 hours.
Prerequisite: JOUR 3310 and JOUR 3510.
Issues of journalistic ethics and social responsibility confronting contemporary American print media and students planning journalism careers.

JOUR 5530/7530. Editorial Writing and Issues. 3 hours.
Prerequisite: JOUR 3410 and permission of department.
Creation, production, and analysis of editorials and editorial pages. Methods of identifying and researching issues and organizing, writing, and editing editorials will be stressed along with methods of analyzing editorials and editorial pages.

JOUR 5580/7580. Magazine Article Writing. 3 hours.
Prerequisite: JOUR 3310 and JOUR 3510 and permission of department.
Methods and procedures in writing various types of

articles and features for magazines, magazine sections of newspapers, and other periodicals.

JOUR 5590/7590. Critical Writing and Reviewing. 3 hours.
Prerequisite: JOUR 3510 and permission of department.
Criticizing and reviewing popular culture and fine arts offerings, such as films, television, pop music and theatre, dance and classical music—for newspapers, magazines, and broadcast media.

JOUR 5600/7600. Investigative Reporting. 3 hours.
Prerequisite: JOUR 5300 and permission of department.
Techniques, methods, and practices of investigative, interpretive, and in-depth reporting for print media. Projects in public affairs reporting are developed.

JOUR 5620/7620. Magazine Management. 3 hours.
Prerequisite: JOUR 3310.
Finance and planning skills required to manage the business side of a magazine. Attention will be given to the various systems used in the magazine industry to produce a finished product.

JOUR 5640/7640. Newspaper Management. 3 hours.
Prerequisite: JOUR 3310.
Business and editorial management of newspapers, including newsroom, circulation, advertising, and promotion strategies.

JOUR 5660/7660. Journalism in the Secondary School. 3 hours.
News gathering, news writing, media law and ethics, copy editing, typography, photography, design, desktop publishing, broadcast news, and business practices of newspapers, with specific emphasis on advising staffs of high school newspapers and other media and editing public relations publications for schools.

JOUR 5670/7670. Contemporary American Newspapers. 3 hours.
Prerequisite: JOUR 3310.
The newspaper and its role in America today. Concentration is on content, policy, influence, social responsibility and ethics, economics, marketing strategies, and technology. Leading newspapers in various regions are examined closely.

JOUR 5700/7700. Advanced Magazine Article Writing. 3 hours.
Prerequisite: JOUR 5580/7580 and permission of department.
An advanced professional course utilizing research and writing techniques to produce articles and features for specific magazine audiences.

JOUR 5800/7800. Computer Assisted Reporting. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: JOUR 5300 and permission of department.
Use of computers in journalism to gather, analyze, and present information. Subjects include spreadsheets, databases, and electronic searches in public and commercial sources.

JOUR 5850/7850. Information/Explanation Graphics. 3 hours.
Undergraduate prerequisite: JOUR 3510.
Transforming raw media information into visually informative and attractive presentations through graphic and page design.

JOUR 5990. Seminar in Journalism. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: JOUR 3510 and permission of department.
Variable topics seminar to analyze processes and effects of journalism and to acquire specialized knowledge of specific journalism modes of presentation and production.
Non-traditional format: Varies with the topic and approach.

(JPNS) Japanese

College of Arts and Sciences, Department of Comparative Literature

JPNS 1001. Elementary Japanese I. 4 hours.
Emphasis on listening, speaking, reading, and writing. Students will learn grammar, Hiragana and Katakana characters, and about 80 Kanji characters. All lessons include Japanese culture notes. Course also includes conversation sessions and character recognition and pronunciation exercise sessions on computers.

JPNS 1002. Elementary Japanese II. 4 hours.
Prerequisite: JPNS 1001.
Equal emphasis on listening, speaking, reading, and writing. Students will learn grammar and 120 Kanji characters. Lessons include Japanese culture notes as well. The course also includes conversation sessions and character recognition and pronunciation exercise sessions on computers.

JPNS 1100. Intensive Japanese. 3 hours.
Prerequisite: JPNS 1002.
Japanese language course with focus on reading, writing, speaking, and understanding Japanese for students beyond the beginning level.

JPNS 2001. Intermediate Japanese I. 3 hours.
Prerequisite: JPNS 1002.
Equal emphasis on listening, speaking, reading, and writing. Students will learn grammar and about 140

Kanji characters. All lessons include Japanese culture notes as well. The course also includes character recognition and pronunciation exercise sessions on computers.

JPNS 2002. Intermediate Japanese II. 3 hours.
Prerequisite: JPNS 2001.
Equal emphasis on listening, speaking, reading, and writing. Students will learn grammar and about 160 Kanji characters. All lessons include Japanese culture notes as well. The course also includes character recognition and pronunciation exercise sessions on computers.

JPNS 2150. Business Japanese. 3 hours.
Prerequisite or corequisite: JPNS 1002.
Language, customs, and skills that are essential to transact business successfully in Japan, with textbooks as well as with actual and audio-visual materials.

JPNS 3010. Advanced Japanese I. 3 hours.
Prerequisite: JPNS 2002 or permission of department.
Equal emphasis on listening, speaking, reading, and writing. Students will learn grammar and about 220 Kanji characters. All lessons include Japanese culture notes as well. The course also includes character recognition and pronunciation exercise sessions on computers.

JPNS 3020. Advanced Japanese II. 3 hours.
Prerequisite: JPNS 3010 or permission of department.
Equal emphasis on listening, speaking, reading, and writing. Students will learn grammar and about 270 Kanji characters. All lessons include Japanese culture notes as well.

JPNS 3990. Directed Study in Japanese Language and Literature. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent study and research under the direction of individual faculty members.
Non-traditional format: Directed study.

JPNS 4110. Advanced Japanese III. 3 hours.
Prerequisite: JPNS 3020 or permission of department.
A continuation of Advanced Japanese II, with emphasis on improved proficiency in the four language skills of reading, writing, speaking, and listening, and concentration on the reading of literary texts in Japanese.

JPNS 4120. Advanced Japanese IV. 3 hours.
Prerequisite: JPNS 4110 or permission of department.
A continuation of Advanced Japanese III, including the introduction of basic concepts of translating and interpreting from English into Japanese and from Japanese into English and the reading of literary texts in Japanese.

JPNS 4500/6500. Readings in Japanese Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: JPNS 3020.
Selected readings of Japanese literature in the original language. Texts will vary, with focus on readings of works of literature and discussion of issues in literary criticism in Japanese.

(JRLC) Journalism Core

College of Journalism and Mass Communication, Department of Journalism

JRLC 5040/7040. Law of Mass Communication. 3 hours.
Prerequisite: (ADPR 3100 or ADPR 3850 or JOUR 3310 or TELE 3010) and permission of school.
First Amendment principles and communication law affecting print, telecommunications, advertising, and public relations.

JRLC 5080. International Mass Communication. 3 hours.
Mass media of the world—what they are like, how they operate, and what impact they have. Philosophies of different systems will be compared, as well as efforts at development or regulation of these systems. Attention will be given to print and electronic media and to international news agencies.

JRLC 5210. Social Effects of Mass Communication. 3 hours.
Patterns of influence among mass communication and the individuals, organizations, and institutions in society. Current research and critical literature are analyzed in reviewing debates about claims of media effects, including socialization of children, formation of attitudes and values, promotion of social behaviors, and legitimation of power structures.

JRLC 5400. Race, Gender, and the Media. 3 hours.
Prerequisite: Junior standing.
Relationship between men, women, and racial and ethnic minorities in the United States and the media. Includes discussions of representations in mass media (television, print media, advertising, and film); impact of representations on audiences; inequities in media professions and institutions; and alternative, feminist, and minority media.

JRLC 5490/7490. History of the Mass Media in the United States. 3 hours.
Mass media in the United States from the colonial

period to the present. Special attention is given to newspapers, magazines, radio, and television and their relationship to the history and development of the nation.

(KREN) Korean

College of Arts and Sciences, Department of Comparative Literature

KREN 1001. Elementary Korean I. 4 hours.
Pronunciation, grammar, particles, basic sentence construction and sentence patterns. Reading and writing in Hangul, the national writing system.

KREN 1002. Elementary Korean II. 4 hours.
As a continuation of Elementary Korean I, this course focuses on pronunciation, grammar, particles, basic sentence construction and sentence patterns. Reading and writing in Hangul, the national writing system.

KREN 2001. Intermediate Korean I. 3 hours.
Pronunciation, grammar, particles, sentence construction, and sentence patterns. Declarative, interrogative, propositive, and imperative speech styles. Reading and writing in Hangul, the national writing system.

KREN 2002. Intermediate Korean II. 3 hours.
As a continuation of Intermediate Korean I, this course focuses on pronunciation, grammar, particles, sentence construction, and sentence patterns. Declarative, interrogative, propositive, and imperative speech styles. Reading and writing in Hangul, the national writing system.

KREN 3001. Advanced Korean I. 3 hours.
This course focuses on building an advanced-level vocabulary and grammar knowledge in Korean for a variety of verbal and written communications.

KREN 3002. Advanced Korean II. 3 hours.
As a continuation of Advanced Korean I, this course focuses on building an advanced-level vocabulary and grammar knowledge in Korean for a variety of verbal and written communications.

KREN 4001. Business Korean. 3 hours.
Students will be able to speak, comprehend, read, and write business Korean and will also be able to understand Korean business culture through classroom activities, field trips, and homework assignments based on authentic material.

KREN 4002. Business Korean II. 3 hours.
Prerequisite: KREN 4001.
A continuation of Business Korean.

(LAND) Landscape Architecture

School of Environmental Design

LAND 1600. Reading the Landscape. 2 hours. 1 hour lecture and 2 hours lab per week.
Approaches to perceiving and interpreting the landscape. Topics include the landscape in art and literature, visual assessment techniques, use of maps, field sketching, and photography.

LAND 2010. Landscape Architecture Design Studio I. 4 hours. 8 hours lab per week.
The elements, principles, and processes of visual design as a foundation for environmental design. Emphasis is on the development of creativity and skills through the application of theory and techniques in a series of two and three dimensional design projects.

LAND 2020. Landscape Architecture Design Studio II. 4 hours. 8 hours lab per week.
A continuation of Landscape Architecture Design Studio I. The integration of the range of design determinants in landscape architecture. Further exploration of the design process.

LAND 2310. Landscape Ecology Processes and Materials. 3 hours.
The range of natural processes and materials relevant to landscape architecture (e.g., climate, geomorphology, geology, hydrology, soils, and vegetation communities.) The relationship between these materials and natural processes. Exercises will include some conceptual manipulation of these materials.

LAND 2320. Landscape Construction Processes and Materials. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: EDES 2210.
The range of materials used in the built environment by landscape architects: metals, concrete masonry, glass, plastics, wood. Emphasis on understanding the properties of these materials and the implications for design.

LAND 3030. Landscape Architecture Design Studio III. 4 hours. 8 hours lab per week.
Prerequisite: LAND 2020.
Corequisite: LAND 3530 and EDES 3230.
Planning and resource analysis. Projects will focus on examining the application principles of sustainable design principles at a variety of scales.

LAND 3040. Landscape Architecture Design Studio IV. 4 hours. 8 hours lab per week.
Prerequisite: LAND 3030.
Corequisite: LAND 3540.
The design of housing and mixed-use projects which

focus on the issues of community and privacy at a variety of scales from single family dwellings to new towns.

LAND 3330. Landscape Engineering Processes and Materials. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: LAND 2020 and EDES 2210.
The forming and building of landscapes with emphasis on the values of "sustainability." Includes introduction to landscape engineering: grading, drainage, and roadway alignment.

LAND 3340. Applied Landscape Engineering. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: LAND 3330.
Applied grading, drainage, and road alignment.

LAND 3410. Plants of the South. 3 hours. 1 hour lecture and 4 hours lab per week.
Plant materials of the southern United States with an emphasis upon the ornamental attributes, cultural requirements and tolerances, historical origins, and ecological characteristics of plants used in landscape architecture. The course will cover both native and introduced species.

LAND 3420. Plants of Georgia. 2 hours. 1 hour lecture and 2 hours lab per week.
A continuation of Plants of the South. Native and introduced species; including trees, shrubs, grasses, herbaceous annual and perennial plants, and commonly used indoor plants.

LAND 3440. Planting Design I. 2 hours. 4 hours lab per week.
Prerequisite: LAND 2020.
Prerequisite or corequisite: LAND 3410.
Analysis of plant elements and form. Emphasis on plant function in the landscape composition. Basic problems in planting design of small scale areas with emphasis on orientation, arrangement, and human needs.

(LAND)HORT 3450. Residential Design. 3 hours. 2 hours lecture and 2 hours lab per week.
Use and selection of plants for environmental design.

LAND 3530. Planning and Design. 2 hours.
Approaches to planning and design in landscape architecture. The relationship between applied theories and methods and the environmental, social, and cultural context of projects.

LAND 3540. Dwelling and Community. 2 hours.
Prerequisite: LAND 3530.
Corequisite: LAND 3040.
Concepts and theories of residential and neighborhood form.

(LAND)(BIOL)(ECOL)(EHSC)ENTO 3590-3590L. Urban Entomology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: (BIOL 1104 and BIOL 1104L) or BIOL 1108-1108L or permission of department.
Urban entomology, including identification, biology, and control of insects and selected arthropod pests with emphasis on the efficacy and environmental impact of pest control tactics in the urban habitat.

LAND 4050. Landscape Architecture Design Studio V. 4 hours. 8 hours lab per week.
Prerequisite: LAND 3040.
Corequisite: LAND 4550.
Projects of regional significance, with special emphasis on the role of ecology and the sense of the region. May include recreational facilities and regional park systems. Projects will be developed through a variety of scales to a design development level.

LAND 4060. Landscape Architecture Design Studio VI. 4 hours. 8 hours lab per week.
Prerequisite: LAND 4050.
Corequisite: LAND 4560.
Urban design and architecture. Projects will be developed through a variety of scales to a design development level. The relationship between landscape architecture, architecture, and urban design.

LAND 4070/6070. Garden Design in America. 4 hours. 8 hours lab per week.
Prerequisite: LAND 4060 or LAND 6020.
Design traditions which have shaped American gardens over the past 200 years with emphasis on the twentieth century, and plants, uses, design forms, and environmental conditions through which these traditions have been expressed. Designing gardens informed by traditional models.

LAND 4080/6080. Gardens as Nurturing Environments. 4 hours. 8 hours lab per week.
Prerequisite: LAND 4060 or LAND 6020.
Physical, psychological, perceptual, and cultural influences of garden design, with an emphasis on gardens for healing, play, discovery/learning, and other sensory/therapeutic stimuli.

LAND 4150/6150. Land Development Studio. 4 hours. 8 hours lab per week.
Prerequisite: LAND 4060 or LAND 6340.
Land development process. Landscape architecture and real estate students prepare a report that includes absorption, targeted market, estimates, financial feasibility, site planning, design, and building types to be reviewed by a visiting jury of developers, designers, planners, and brokers.

LAND 4250. Portfolio Development. 2 hours. 4 hours lab per week.

Portfolio/resume preparation and interviewing techniques. Landscape architecture registration exam preview and preparation of design competition packages.

LAND 4360. Applied Landscape Ecology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: LAND 2310.
The concept and functioning of ecosystems and how this understanding can be applied in environmental design. Review of adverse impacts that can result from failure to apply sound ecological principles. Exercises will include some conceptual manipulation of ecological processes and materials.

LAND 4370. Applied Landscape Construction. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: LAND 2320.
Detailing of architectural and planting elements in the landscape with an emphasis on appropriate detailing for sustainability and longevity in urban contexts.

LAND 4380. Landscape Architecture Implementation Documents. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: LAND 3340 and LAND 4060 and LAND 4370.
Construction, engineering, and planting documents for implementing landscape architecture projects.

LAND 4390. Landscape Architecture Post-Construction Documents and Processes. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: LAND 4060.
Post-construction processes and documents relevant to the implementation and management of designed and natural landscapes. Includes development of landscape management plans, and post-construction evaluation.

LAND 4400/6400. Plant Communities of the Southeast. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: LAND 4360 or LAND 6320.
The plant communities of the southeastern United States, with emphasis on botanical and aesthetic characteristics, factors affecting community composition, and community dynamics.

LAND 4550. Region, Site and Place. 2 hours.
Prerequisite: LAND 3540.
Corequisite: LAND 4050.
Physical and cultural determinants of landscape character from regional to site-specific scales.

LAND 4560. Urban Design and Architecture: Ideas and Theories. 2 hours.
Urban design and architecture including analysis of various theories used as a framework for the development of architectural and urban form.

LAND 4570. Contemporary Landscape Architecture Theory. 2 hours.
Prerequisite: LAND 4560.
Contemporary issues and theories in landscape architecture. Emphasis is on the relationship between theoretical approaches and built form.

LAND 4580/6580. Landscapes in Painting, Poetry, Literature, and Design. 2 hours.
Prerequisite: EDES 1500 or EDES 6520.
The appreciation and understanding of nature, landscape, and garden in painting, poetry, and literature. Study of how changing attitudes to the environment affect aesthetic appreciation of landscape and are reflected in the design of gardens and the description of landscapes in art and literature.

LAND 4700. Landscape Architecture Internship. 8 hours.
Prerequisite: Permission of school.
Professional office experience under the supervision of licensed landscape architect or related practitioner.
Non-traditional format: Internship conducted off-site in professional offices. A minimum of two-months full-time supervised employment for eight credits.

LAND 4701. Landscape Architecture Internship. 8 hours.
Prerequisite: Permission of school.
Professional office experience under the supervision of licensed landscape architect or related practitioner.
Non-traditional format: Internship conducted off-site in professional offices. A minimum of one-half of a semester full-time supervised employment for eight credits.

LAND 4702. Landscape Architecture Internship. 8 hours.
Prerequisite: Permission of school.
Professional office experience under the supervision of licensed landscape architect or related practitioner.
Non-traditional format: Internship conducted off-site in professional offices. A minimum of one-half of a semester full-time supervised employment for eight credits.

LAND 4710/6710. Professional Practice. 2 hours.
Prerequisite: Junior standing.
The legal environment of business focusing on public and private law. Professional relations during project management, resolution of disputes, the court system, torts, real property/liens, contract law, specification writing, insurance bonds, business organizations, ethics, and professional registration.

LAND 4720. Senior Project Proposal. 1 hour.
The preparation of a proposal for a senior project.

LAND 4800/6800. Field Study in Contemporary Landscape Architecture. 3 hours. 3 hours lab per week.
Prerequisite: (LAND 2020 and EDES 2520) or permission of school.
Current and historic works and individuals in the fields of landscape architecture, architecture, historic preservation, and urban design in the United States. The class will visit significant projects, offices, national parks, and landmarks during a ten to fourteen-day trip to another region of the country.
Non-traditional format: Field study.

LAND 4810/6810. Field Study in American Garden Design. 2 hours.
Prerequisite: LAND 4070/6070.
Recognized professional firms, garden designers, and gardens central to the evolution and current culture of garden design in America.
Non-traditional format: Course consists of a 10-11 day field trip to earn two hours credit.

LAND 4900. Senior Project. 8 hours. 8 hours lab per week.
Prerequisite: LAND 4720.
A comprehensive design or research project in which the student is able to demonstrate the proficiency acquired in the professional program of study.

LAND 4910/6910. Independent Project. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of school.
Special study or project under the direction of faculty.

LAND 4911/6911. Independent Project. 1-6 hours.
Prerequisite: Permission of school.
Special study or project under the direction of faculty.
Non-traditional format: Directed study.

LAND 4912/6912. Independent Project. 1-6 hours.
Special study or project under the direction of faculty.
Non-traditional format: Directed study.

LAND 4960H. Directed Projects in Landscape Architecture (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading or projects under the direction of a project director.
Non-traditional format: Directed study.

LAND 4970H. Directed Projects in Landscape Architecture (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

LAND 4980H. Directed Projects in Landscape Architecture (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

LAND 4990H. Honors Thesis in Landscape Architecture. 8 hours. 8 hours lab per week.
Prerequisite: Permission of Honors.
Individual research in major field or in a closely related field.

(LATN) Latin

College of Arts and Sciences, Department of Classics

LATN 1001. Elementary Latin I. 4 hours.
The Latin language; pronunciation, fundamentals of grammar, reading, and translation.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

LATN 1002. Elementary Latin II. 4 hours.
Prerequisite: LATN 1001.
Completion of study of Latin grammar and syntax begun in Elementary Latin I, with continuation of reading and translation.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

LATN 2001. Intermediate Latin I. 3 hours.
Prerequisite: LATN 1002.
Translating continuous Latin passages through readings from Cicero's orations, with brief selections from Caesar's Gallic Wars and from Latin poetry. Systematic review of Latin grammar and syntax.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

LATN 2002. Intermediate Latin II: Golden Age Latin Literature. 3 hours.
Prerequisite: LATN 2001.
Golden Age Latin prose and poetry. Prose readings selected from Livy or Cicero; verse readings from Catullus, Vergil, or Ovid.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

LATN 3010. Vergil's *Aeneid*. 3 hours.
Prerequisite: LATN 2002.
Latin poetry, poetic syntax, meter, and style through readings from Vergil's *Aeneid*, including selections from *Aeneid* books 3, 5, or 7-12, and others.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

LATN 4010/6010. Roman Rhetoric. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the orations and rhetorical writings of Cicero, Quintilian, Seneca Rhetor, and others.

LATN 4020/6020. Roman Epic Poetry. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the Latin epic poets Ennius, Vergil, Lucan, and others.

LATN 4030/6030. Roman Historians. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from Roman historical writers such as Caesar, Sallust, Ammianus Marcellinus, and others.

LATN 4040/6040. Roman Elegy. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the elegiac works of Tibullus/Sulpicia, Propertius, and Ovid, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

LATN 4050/6050. Roman Epistles. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the letters of Cicero, Seneca, Pliny the Younger, and others.

LATN 4060/6060. Roman Satire. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from such satirists as Horace, Juvenal, and others.

LATN 4070/6070. Roman Drama. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the comedies of Plautus and Terence, and the tragedies of Seneca, and others.

LATN 4080/6080. Roman Didactic Poetry. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from Lucretius' *De Rerum Natura*, Vergil's *Georgics*, and others. The poet as teacher; the manner in which poetic form and imagery express philosophy.

LATN 4090/6090. Latin of Later Antiquity and the Middle Ages. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from Latin authors of late antiquity and the Middle Ages. Study of Latin vocabulary and style during late antiquity and the Middle Ages.

LATN 4100/6100. Roman Biography. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from Latin biographical authors such as Nepos, Suetonius, Tacitus, the Scriptores Historiae Augustae, and Einhard.

(LATN)GREK(LING) 4150/6150. Comparative Grammar of Greek and Latin. 3 hours.
Prerequisite: Undergraduate level only: LATN 3010 or GREK 2002 or permission of department Graduate level only: Pass on Classics Department Greek or Latin proficiency exam or permission of department.
The positions of Greek and Latin within the Indo-European language family with special attention to the phonological evolution of both Greek and Latin from Proto-Indo-European.

LATN 4200/6200. Catullus. 3 hours.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the *Carmina* of Catullus, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

LATN 4210/6210. Horace. 3 hours.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.

Readings from the works of Horace, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

LATN 4220/6220. Ovid. 3 hours.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the *Metamorphoses* and non-elegiac works of Ovid, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

LATN 4300/6300. Cicero and the Roman Republic. 3 hours.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the orations and other works of Cicero, and from the works of Caesar, Sallust, and other contemporary writers.

LATN 4310/6310. Livy. 3 hours.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the *Ab Urbe Condita* of Livy, with attention to literary and historical issues surrounding the author and his works.

LATN 4320/6320. Tacitus. 3 hours.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings from the *Annales*, *Historiae*, and/or minor works of Tacitus, with attention to literary and historical issues surrounding the author and his works.

LATN 4400/6400. Advanced Readings in Latin. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Undergraduate level only: LATN 3010; Graduate level only: Permission of department.
Readings in one or more Latin authors or genres. Topics to be selected on the basis of student needs.

(LEGL) Legal Studies

Terry College of Business, Department of Insurance, Legal Studies, and Real Estate

LEGL 2700. Legal and Regulatory Environment of Business. 3 hours.
Not open to students with credit in LEGL 2800H.
The legal and regulatory environment of business, emphasizing why legal duties are placed on the business community and how managers should appropriately respond to them. Covers legal institutions, constitutional law, common law, and public law.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

LEGL 2800H. Legal and Regulatory Environment of Business (Honors). 3 hours.
Not open to students with credit in LEGL 2700.
Prerequisite: Permission of Honors.
The legal and regulatory environment of business, emphasizing why legal duties are placed on the business community and how managers should appropriately respond to them. Covers legal institutions, constitutional law, common law, and public law.

LEGL 4100H. Current Issues in Legal Studies (Honors). 3 hours.
Prerequisite: LEGL 2700 and permission of Honors.
Legal issues of current importance to business managers designed to develop critical legal thinking skills.

LEGL 4300/6300. Law of Business Organizations. 3 hours.
Prerequisite: LEGL 2700.
A managerial, entrepreneurial focus on the law applicable to forming partnerships, corporations and other business entities, raising capital and structuring relationships with agents, employees, partners, officers, and directors.

LEGL 4400/6400. Business Law. 3 hours.
Prerequisite: LEGL 2700.
Debtor-creditor relations, commercial paper, contracts, securities, agency, partnership, joint ventures, corporations, professional and legal responsibility, sales, secured transactions, bankruptcy.

LEGL 4500/6500. Employment Law. 3 hours.
Laws prohibiting employment discrimination based on race, gender (including sexual harassment), religion, national origin, age, and disability, with an emphasis on avoiding unnecessary liability.

LEGL 4600. Negotiation and Alternative Dispute Resolution Systems. 3 hours.
Styles of negotiation as a tool used to resolve and reduce conflicts and disputes. Also studied are ADR systems, such as arbitration and mediation.

LEGL 4900. International Legal Transactions for Business. 3 hours.
Prerequisite: LEGL 2700.
Laws, agreements, and institutions that affect international business transactions with particular

emphasis on licensing, exporting, contract formation, dispute resolution, intellectual property rights, and cultural, political, and ethical problems.

LEGL(REAL) 5200. Real Estate Law. 3 hours.
Prerequisite: REAL 4000.
How law impacts real estate, its ownership, conveyance, and development. Real property ownership interests, restrictions on such interest, methods of transferring such interest, private and public land-use controls, and legal transactions involving real estate, such as gifts, sales, and leases.

(LING) Linguistics

College of Arts and Sciences, Linguistics Program

LING 1810. Elementary Biblical Hebrew I. 4 hours.
Not open to students with credit in HEBR 1001.
A study of classical Hebrew grammar.

LING 1820. Elementary Biblical Hebrew II. 4 hours.
Not open to students with credit in HEBR 1002.
Prerequisite: HEBR 1001 or LING 1810.
A study of classical Hebrew grammar.

LING 1910. Elementary Standard Arabic I. 4 hours.
Not open to students with credit in ARAB 1001.
Fundamentals of grammar, pronunciation, reading, composition, and conversation of standard (including classical) Arabic.

LING 1920. Elementary Standard Arabic II. 4 hours.
Not open to students with credit in ARAB 1002.
Prerequisite: ARAB 1001 or LING 1910.
Fundamentals of grammar, pronunciation, reading, composition, and conversation of standard (including classical) Arabic.

(LING)CLAS 2010. The Nature of the English Vocabulary. 3 hours.
The nature and composition of the English vocabulary, with particular attention to Greek and Latin elements, and its development among diverse cultures and societies; techniques of morphological analysis, allomorphy, derivational morphology, formal and semantic change, and Indo-European etymology.

LING 2100. The Study of Language. 3 hours.
The scientific study of language, emphasizing such topics as the organization of grammar, language in space and time, and the relationship between the study of language and other disciplines.

LING 2100H. The Study of Language (Honors). 3 hours.
Not open to students with credit in LING 2100.
Prerequisite: Permission of Honors.
The scientific study of language, emphasizing such topics as the organization of grammar, language in space and time, and the relationship between the study of language and other disciplines.

LING 2830. Intermediate Biblical Hebrew I. 3 hours.
Not open to students with credit in HEBR 2003.
Prerequisite: HEBR 1002 or LING 1820.
Classical Hebrew grammar, with reading of selected texts from the Hebrew Bible/Old Testament.

LING 2840. Intermediate Biblical Hebrew II. 3 hours.
Not open to students with credit in HEBR 2004.
Prerequisite: HEBR 2003 or LING 2830.
Readings of Hebrew texts selected from the Hebrew Bible/Old Testament, Dead Sea Scrolls, or early rabbinic literature.

LING 2930. Intermediate Standard Arabic I. 3 hours.
Not open to students with credit in ARAB 2003.
Prerequisite: ARAB 1002 or LING 1920.
Intermediate grammar, reading, conversation, and composition in standard (including classical) Arabic. Particular attention will be given to readings in Islamic literature.

LING 2940. Intermediate Standard Arabic II. 3 hours.
Not open to students with credit in ARAB 2004.
Prerequisite: ARAB 2003 or LING 2930.
Intermediate grammar, reading, conversation, and composition in standard (including classical) Arabic. Particular attention will be given to readings in Islamic literature.

(LING)ARAB 3005. Advanced Standard Arabic I. 3 hours.
Prerequisite: ARAB 2004 or permission of department.
Advanced grammar, reading, conversation, and composition in standard (including classical) Arabic. Particular attention will be given to readings in Islamic literature.

(LING)ARAB 3006. Advanced Standard Arabic II. 3 hours.
Prerequisite: ARAB(LING) 3005 or permission of department.
A continuation of Advanced Standard Arabic I.

LING(ENGL) 3020. Language Variation. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.

Theory and assessment of regional and social language variation within one language, including the relationship of variation to language change. Historical and present-day illustrations come primarily from English, with consideration of the significance of language variation in our modern social context.

(LING)ENGL 3030. Introduction to the English Language. 3 hours.
Prerequisite: ENGL 1102 or ENGL 1030.
The history, structure, and modern varieties of the English language.

(LING)SPAN 3050. Introduction to Spanish Linguistics. 3 hours.
Prerequisite: SPAN 3010.
Fundamentals of language in general and Spanish in particular. Linguistic knowledge, language variation, and language contact phenomena. Representative Spanish sound systems, syllabic structure, sentence patterns, structure and meaning of words. Analysis of data from oral and written registers. Given in Spanish.

LING 3060. Phonetics and Phonology. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
Phonetic transcription of various languages dictated by native and non-native speakers; understanding of the phonetic principle by the solution of selected problems which consist of phonetically transcribed data.

(LING)ANTH 3080. Anthropology of Language. 3 hours.
Prerequisite: ANTH 1102 or LING 2100 or permission of department.
Anthropological studies in language, including origins and evolution, prehistory, geographical distribution, typology and classification, language and speech communities. Relationships between language and culture, language and society, and language and environment will be emphasized.

(LING)FREN 3090. Introduction to French Linguistics. 3 hours.
Prerequisite: FREN 3010.
The field of French linguistics, emphasizing such topics as the internal and external history of French; the sounds, forms, and vocabulary of modern French; and the linguistic variation within France and the French-speaking world.

LING(ENGL) 3150. Generative Syntax. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
Techniques and formalisms for analyzing syntactic phenomena of human languages within the framework of generative grammar. Examples will be drawn primarily from English.

(LING)GRMN 3380. Contrastive Grammar of English and German. 3 hours.
Prerequisite: GRMN 2002.
Contrastive analysis of German and English phonology and grammar. Prepares future teachers of German to identify structural differences between English and German.

LING 3830. Languages of the World. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
The classification and distribution of languages of the world and a survey of linguistic structures as exemplified by selected languages.

(LING)ENGL 4000/6000. History of the English Language. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The development of present English through the stages of Old English, Middle English, and early Modern English. Study of elementary phonetics, phonemics, sound change, and dialect variation.

(LING)ENGL 4010/6010. American English. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
The history, present status, and future prospects of American English, including standards and internal variation.

(LING)ENGL(AFAM) 4040. Language Use in the African American Community. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
History and structure of the speech and language styles used in the African American community; examination of linguistic and cultural issues that confront the majority of African Americans; the role of the vernacular language of African Americans in society.

(LING)ENGL 4060/6060. Old English. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
The language and literature of England before the Norman Conquest, with reading of selected texts.

(LING)ANTH 4090/6090. Cognitive Anthropology. 3 hours.
Prerequisite: ANTH 1102 or permission of major.
Folk systems of knowledge, with an emphasis on how people in different societies culturally identify, define, label, and classify phenomena such as color terms, plants, animals, and other environmental resources.

(LING)ENGL 4100/6100. Lexicography. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4000/6000 or LING 2100.
Principles and methods of dictionary making with emphasis on monolingual English and bilingual dictionaries. Topics may include typology of dictionaries and dictionary users, the history of lexicography, the collection and selection of headwords and examples; the definition style, pronunciation, labeling, translation equivalents, etymology, illustrations, and encyclopedic information. Offered every year.

(LING)ENGL 4110/6110. English Grammar. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or CMLT 2111 or CMLT 2210 or CMLT 2212 or CMLT 2220 or ENGL 2310 or ENGL 2320 or ENGL 2330 or ENGL 2340 or ENGL 2400.
English grammar in the scholarly tradition of Curme and Jespersen..

(LING)CMSD 4120/6120. Anatomy and Physiology of Speech, Voice, and Hearing. 3 hours.
Prerequisite: Permission of department.
Anatomical structures and basic physiological functions underlying audition, respiration, phonation, articulation, resonance, and swallowing.

(LING)CMSD 4140/6140. Introduction to Speech and Voice Science. 3 hours.
Prerequisite: CMSD 4090/6090 and CMSD(LING) 4120/6120 and PSYC 1101 and (MATH 1101 or PHYS 1010 or permission of department).
Application of basic physical principles to production and perception of speech and voice. Biomechanics of vocal fold oscillation; acoustics of voice source; resonance; acoustic phonetics; psychoacoustics of speech and voice. Interpretation of objective measures and outputs of computational models.

(LING)GREK(LATN) 4150/6150. Comparative Grammar of Greek and Latin. 3 hours.
Prerequisite: Undergraduate level only: LATN 3010 or GREK 2002 or permission of department Graduate level only: Pass on Classics Department Greek or Latin proficiency exam or permission of department.
The positions of Greek and Latin within the Indo-European language family with special attention to the phonological evolution of both Greek and Latin from Proto-Indo-European.

(LING)ENGL 4170/6170. Second Language Acquisition. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4110/6110 or LING 2100.
Linguistic theories of second language acquisition, with emphasis on the acquisition of English. Topics include order of acquisition, sociocultural factors with linguistic bases, and neurolinguistic models.

(LING)ENGL 4180/6180. ESL Error Analysis. 3 hours.
Prerequisite: ENGL(LING) 3030 or ENGL(LING) 4110/6110 or LING 2100.
Psycholinguistic theory applied to problems in second language learning, and the prediction of language behavior through the use of contrastive analysis.

(LING)ENGL 4190. Topics in the English Language. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
A special topic not otherwise offered in the English curriculum. Topics and instructors vary from semester to semester.

LING 4210/6210. Introduction to Indo-European Studies. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
The Indo-European language family: the various early Indo-European dialects, their grammatical structures, and the evolution of those structures from the proto-language.

(LING)PHIL 4300/6300. Philosophy of Language. 3 hours.
Prerequisite: (PHIL 2500 and any 3000-level PHIL course) or permission of department.
Topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism, and the uses of language.

(LING)GRMN 4460/6460. Structure of Modern German. 3 hours.
Prerequisite: GRMN 3001.
Linguistic and sociolinguistic structures of modern German with relevant linguistic terminology. Emphasis on phonology, morphology, and syntax. Taught in English.

(LING)CMSD 4500/6500. Study of Language Development. 3 hours.
Prerequisite: Permission of department.
Normal development of children's reception, integration, and expression of linguistic information; cultural, gender, socioeconomic, cognitive, and prelinguistic influences on language development.

(LING)PHIL 4510/6510. Deductive Systems. 3 hours.
Prerequisite: PHIL 2500 or permission of department.
Symbolic-mathematical logic, examining the propositional and predicate calculi, with emphasis on problems in translation and formalization and topics in the philosophy of logic and mathematics.

(LING)PHIL 4520/6520. Model Theory. 3 hours.
Prerequisite: PHIL(LING) 4510/6510 or permission of department.
Formal semantics for sentential and first-order predicate logic, including both soundness and completeness results for first-order logic. Additional topics may include Goedel's incompleteness results, the Skolem-Lowenheim theorem, or possible world semantics for modal logics.

LING(CLAS) 4610/6610. Sanskrit I. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
The phonology, morphology, and syntax of the classical Sanskrit language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

LING(CLAS) 4620/6620. Sanskrit II. 3 hours.
Prerequisite: LING(CLAS) 4610/6610.
Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

(LING)FREN 4630. French Phonetics. 3 hours.
Prerequisite: FREN(LING) 3090.
The French sound system in theory and practice. How French sounds are formed and how they reflect social class and geographical origin. Work on pronunciation in class and the language laboratory. Given in French.

(LING)SPAN 4650. Spanish Phonetics and Language Variation. 3 hours.
Prerequisite: SPAN(LING) 3050.
Speech organs and systematic description of Spanish sounds. Comparison of English and Spanish patterns of stress, pronunciation, and intonation. Examination of recurrent pronunciation errors. Description of major geographical and social dialects. Practice in pronunciation and transcription of sounds. Given in Spanish.

LING 4690/6690. Historical Linguistics. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
Traditional methods of historical linguistics are reviewed, with examples from several different language families. Various kinds of possible phonological and syntactic changes are investigated in relation to modern linguistic theory.

LING 4710/6710. Languages in Contact. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
The influence of languages on other languages spoken in the same or neighboring areas, including pidgins and creoles, with consideration of relationships in phonology, morphology, syntax, semantics, and vocabulary.

LING(CMLT) 4740/6740. Discourse Analysis. 3 hours.
Prerequisite: LING 2100 or permission of department.
An interdisciplinary study of language use, text analysis, and evaluation. The course will provide students with the ability to investigate and evaluate structural features of language and to identify the strategies used by different writers based on style and cultural backgrounds.

LING 4850. Elementary Aramaic/Syriac. 3 hours.
Not open to students with credit in SEMI 4001.
Prerequisite: HEBR 2004 or LING 2840 or permission of department.
Aramaic and/or Syriac grammar, especially as related to Hebrew, along with simple readings from religious texts.

LING(ANTH) 4860/6860. Sociolinguistics. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or ANTH(LING) 3080 or permission of department.
The study of language as a cultural and social phenomenon. Topics include language and meaning, language and world view, language and social behavior, and language and social issues.

LING(CMLT) 4870/6870. Language, Gender, and Culture. 3 hours.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
The role of language and culture in the formation of philosophical assumptions about gender differentiation in society.

LING 4900/6900. Topics in Indo-European Linguistics. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
The synchronic and diachronic grammar of an older Indo-European language. Possible offerings include Avestan, Hittite, Lithuanian, Old Church, Slavic, and Old Irish or topics such as Indo-European phonology, morphology, or syntax.

LING 4910. Special Topics in Linguistics. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: [LING 2100 or ENGL(LING) 3030] and permission of department.
Reading and discussions of current developments and issues in linguistics.

LING 4920/6920. Less-Taught Languages I. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
Study of the phonology, morphology, syntax, and

culture of a less-taught language. Possible offerings include Finnish, Hungarian, and other non-Indo-European languages. This course cannot be used in partial fulfillment of the foreign language requirement in the core curriculum.

LING 4930/6930. Less-Taught Languages II. 3 hours. Repeatable for maximum 9 hours credit.
Undergraduate prerequisite: LING 2100 or ENGL(LING) 3030 or permission of department.
Study of the phonology, morphology, syntax, and culture of a less-taught language. Possible offerings include Finnish, Hungarian, and other non-Indo-European languages. This course cannot be used in partial fulfillment of the foreign language requirement in the core curriculum.

LING 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: [LING 2100 or ENGL(LING) 3030] and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

LING 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: [LING 2100 or ENGL(LING) 3030] and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

LING 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: [LING 2100 or ENGL(LING) 3030] and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

LING 4990H. Honors Thesis. 3 hours.
Prerequisite: [LING 2100 or ENGL(LING) 3030] and permission of Honors.
Individual research for preparation of a thesis.
Non-traditional format: Students will meet with faculty members on a regular basis.

(MARK) Marketing

Terry College of Business, Department of Marketing and Distribution

MARK 3000. Principles of Marketing. 3 hours.
Prerequisite: ACCT 2101 and MIST 2090 or CSCI 1100-1100L.
The ways organizations satisfy consumer and organizational needs and wants for products and services. Markets; buyer behavior; marketing research; segmenting targeting and positioning; and product, place, price, and promotional strategies. Concepts, strategies, applications, and marketing methods used to generate revenues in domestic and global settings.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

MARK 3000H. Principles of Marketing (Honors). 3 hours.
Not open to students with credit in MARK 3000.
Prerequisite: ACCT 2101 and MIST 2090 or CSCI 1100-1100L and permission of Honors.
The ways organizations satisfy consumer and organizational needs and wants for products and services. Markets, buyer behavior, market research, segmentation, and positioning with product, place, price, and promotional strategies. Concepts, strategies, applications, and marketing methods used to generate revenues in domestic and global settings.

MARK 4000. Marketing Research for Business Decisions. 3 hours.
Prerequisite: MARK 3000 and MSIT 3000.
The value of marketing research in the context of business decision making. The course first stresses the process of obtaining information, and then emphasizes the use of this information to develop new products, market to specific segments, monitor the business environment, perform competitive analyses, etc.

MARK 4100. Consumer and Organizational Buyer Behavior. 3 hours.
Prerequisite: MARK 3000.
Consumer and organizational buyer behavior processes. Internal and external influences on decision making, as well as similarities and differences between consumer and organizational choice processes. Concepts from economics and the behavioral sciences will be used to help explain purchase and consumption behavior.

MARK 4200. Sales Force Strategy and Management. 3 hours.
Prerequisite: MARK 3000.
Managing the marketing-driven sales force, including customer relationship and interfacing strategies, cross-functional issues relevant to sales, sales force organization strategies and systems, and customer-focused teams. Human resource issues, such as compensation systems, salesperson development, sales team leadership, and sales training and coaching.

MARK 4250. Account Management and Professional Selling. 3 hours.
Prerequisite: MARK 3000.
Developing and managing a relationship or partnership with a key or national account. Professional selling, including customer opportunity analysis,

problem identification, needs assessment, value analysis, and value-based selling. Contact manager systems and role-plays are used to teach selling competencies.

MARK 4300. Information Technology and Marketing. 3 hours.
Prerequisite: MARK 3000.
How marketers have utilized advances in information technology. Converting information provided by electronic scanning, emerging media such as the World Wide Web, and conventional record-keeping into actionable knowledge. The emergence of database marketing, frequency and relationship marketing programs, and direct marketing provide the context.

MARK 4400. Logistics and Channel Strategy. 3 hours.
Prerequisite: MARK 3000.
Logistical practices associated with integrated supply chain management. Identifying logistical support needed as well as strategies for effectively managing distribution channel relationships; e.g., interactions between channel participants, including manufacturers, various intermediaries such as wholesalers or retailers, and external service providers.

MARK 4500. Product and Service Marketing. 3 hours.
Prerequisite: MARK 3000.
This course describes product and service options and compares and contrasts how product and service ideas are developed, priced, promoted, branded, and distributed.

MARK 4600. Advertising and Sales Promotion. 3 hours.
Prerequisite: MARK 3000.
Advertising and promotion management. Emphasizes advertising and sales promotion in an organization's marketing communications program. Strategic integration and coordination of all elements of the promotion mix and the legal, ethical, and moral implications of promotion.

MARK 4700. International Marketing. 3 hours.
Prerequisite: MARK 3000.
The scope and challenge of international marketing. Emphasizes the cultural dimensions of world markets. Marketing variables will be discussed in terms of developing and executing strategies in different countries.

(MARK) ECON 4750/6750. Introduction to Econometrics. 3 hours.
Prerequisite: ECON 4010 and (STAT 2000 or MSIT 3000).
Estimation and hypothesis-testing techniques using the linear regression model, with emphasis on the least-squares estimator and its performance under different statistical assumptions. A hands-on approach, stressing a wide range of empirical applications.

MARK 4800. Marketing Internship Cooperative. 3 hours.
Prerequisite: MARK 3000.
Students are permitted to enter business organizations to obtain practical and applied marketing experience. A paper describing and analyzing this experience is required.
Non-traditional format: This course is designated for undergraduate internship and does not meet formally.

MARK 4900. Marketing Strategies and Decision Making. 3 hours.
Prerequisite: MARK 4000 and MARK 4100.
This capstone marketing course should be taken during the term just prior to the marketing student's planned graduation. It builds
on knowledge gained from previous courses to solve marketing problems in a global environment. Students develop skills in
integrating the functions of marketing toward forming strategy decisions and creating a marketing plan.

(MARS) Marine Sciences

College of Arts and Sciences, Department of Marine Sciences

MARS 1010-1010L. The Marine Environment. 4 hours. 3 hours lecture and 2 hours lab per week.
Physical, chemical, and geological characteristics of the marine environment. The effects of human activity on marine environments and resources.

MARS 1010H. The Marine Environment (Honors). 4 hours.
Prerequisite: Permission of Honors.
Physical, chemical, and geological characteristics of the marine environment. The effects of human activity on marine environments and resources.

MARS 1020-1020L. Biology of the Marine Environment. 4 hours. 3 hours lecture and 2 hours lab per week.
Fundamental biological principles in marine organisms and ecosystems; diversity of marine life; structure and function of marine biological communities; biological processes in marine environments; the role of the oceans in global cycles, the effects of human activity on life in the sea.

MARS 1020H. Biology of the Marine Environment (Honors). 4 hours.
Prerequisite: Permission of Honors.

Fundamental biological principles in marine organisms and ecosystems; diversity of marine life; structure and function of marine biological communities; biological processes in marine environments; the role of the oceans in global cycles, the effects of human activity on life in the sea.

MARS 3000. Coastal Zone and Marine Law. 3 hours.
Not open to students with credit in FORS 5820/7820.
Prerequisite: Junior or senior standing.
The major statutes, regulations, and litigation histories of the coastal margins and near-shore marine waters. Source and status of rights, preservation, and allocation of resources; cooperative management, pollution control, current systems perspective, and law of the sea.

MARS 3450-3450L. Marine Biology. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1108-1108L and CHEM 1212 and CHEM 1212L.
Study of marine organisms and the environments they inhabit; diversity of marine organisms, primary and secondary production in marine habitats, ecological interactions in marine environments, and management concerns.

(MARS)FORS 3570. The Law of Earth Protection and Resource Use. 3 hours.
Not open to students with credit in AAEC 4930/6930 or FORS 5820/7820.
A first course in legal studies, and an introduction to environmental and natural resources law. Basics of the legal system; selected major protection and resource statutes, regulations, roles and methods of agencies; significant judicial opinions.

MARS 3900. Introduction to Experimental Marine Sciences. 1-4 hours. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Investigation of a defined problem in marine science under the direction of a faculty member.
Non-traditional format: Students will meet with faculty members on a regular basis.

MARS 4100/6100. Physical Processes of the Ocean. 3 hours.
Prerequisite: PHYS 1112-1112L.
Oceanographic principles of the geological and physical structure, composition, and processes of the ocean with emphasis on general oceanic circulation, water properties, waves and tides, coastal physical processes, turbulent mixing, sediment transport.

(MARS) ENGR 4175/6175. Coastal Meteorology. 3 hours.
Prerequisite: MATH 2500 and PHYS 1212-1212L and (MARS 1010-1010L or GEOG 1112).
Prerequisite or corequisite: MATH 2700.
An introduction to air-sea-land interactions that occur at the boundaries of continents. The course will cover atmospheric radiation, thermodynamics, and hydrodynamics, mesoscale and synoptic scale weather systems, atmospheric boundary layers, and applications to engineering meteorology.

MARS 4200/6200. Chemical and Biological Oceanography. 3 hours.
Not open to students with credit in MARS 4110/6110.
Prerequisite: BIOL 1108-1108L and CHEM 1211 and CHEM 2211.
Chemical composition, dynamics, and processes of life in the oceans and the role the life of the oceans plays in global processes.

MARS(FORS) 4380/6380-4380L/6380L. Marine Fisheries Biology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1108-1108L and permission of department.
Interaction of oceanographic processes with the life histories and productivity of marine fisheries species, and the human interactions with major marine fisheries.

MARS 4450/6450. Introduction to Marine Chemistry. 3 hours.
Not open to students with credit in MARS 8020-8020L.
Prerequisite: CHEM 1212 and CHEM 1212L and PHYS 1212-1212L and MATH 2200 and MATH 2200L and MARS 4200/6200.
Chemical properties of oceanic systems, oceanic acid base equilibrium, redox chemistry, nutrient cycling, and radioactive processes.

MARS 4500/6500. Field Study in Oceanography and Marine Methods. 5 hours. 15 hours lecture and 25 hours lab per week.
Prerequisite: Permission of department.
Laboratory and fieldwork in chemical, biological, sedimentological, and physical oceanographic processes and methods in southeast esturaine, coastal, and shelf environments.
Non-traditional format: A field study course taught off-campus.

MARS 4510/6510. Field Study in Oceanography and Marine Methods: Independent Research. 3-7 hours. Repeatable for maximum 7 hours credit. 40 hours lab per week.
Prerequisite: Permission of department.
Independent field research on oceanographic processes.

Non-traditional format: A field study course taught off-campus.

MARS(MIBO) 4620/6620-4620L/6620L. Microbial Ecology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: MIBO 3500 or permission of department.
Emphasizes the roles of microorganisms in ecosystems. Nutrient cycles, methods of microbial analysis, and the functional roles of microorganisms.

MARS 4810/6810. Microbial Biogeochemistry. 3 hours.
Prerequisite: [MIBO 3500 and BCMB (BIOL) (CHEM) 3100] or permission of department.
The microbial processes which are or have been important in modifying the earth's lithosphere, hydrosphere, and atmosphere. Microbially mediated precipitation and solubilization of minerals, cycling of dissolved and particulate organic matter in natural waters, and the physiological ecology of microorganisms adapted to extreme environments.

MARS 4960. Undergraduate Research. 5-15 hours. Repeatable for maximum 15 hours credit. 5-15 hours lab per week.
Prerequisite: Permission of department.
Research project directed by a faculty member independent of scheduled classes.

MARS 4990. Senior Thesis. 5 hours. 15 hours lab per week.
Prerequisite: Permission of department.
Individual research under the direction of a faculty member and presenting the results of the research as a thesis and as an oral presentation.

(MATH) Mathematics

College of Arts and Sciences, Department of Mathematics

(MATH)ACAM 0097. Intermediate Algebra I. 3 hours.
Concepts of fractions, decimals, percents, and signed numbers. Methods for solving first degree equations, systems, and related applications, and graphing linear equations.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(MATH)ACAM 0098. Intermediate Algebra II. 3 hours.
Concepts of factoring, functions, polynomials. Methods for solving second degree and rational equations and related applications. Operations regarding polynomials, exponents, and radicals.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(MATH)ACAM 0099. Introduction to College Algebra. 3 hours.
Concepts of factoring, exponents, polynomials, radicals, fractions, and graphing. Methods for solving equations: rational, first and second degree, absolute value, inequalities, and systems and their related applications.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

MATH 1060. Mathematics of Decision Making. 3 hours.
Applications of modern mathematics to management and decision making including the solution of optimization problems using network theory, methods for optimal scheduling, voting methods, game theory, and related strategies. Applications include planning of postal delivery routes, placement of cable television lines, United States Congressional apportionment, and dispute resolution.

MATH 1090. Trigonometry. 3 hours.
Not open to students with credit in MATH 1113.
Trigonometry with an emphasis on geometric applications.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

MATH 1101. Introduction to Mathematical Modeling. 3 hours.
Mathematical modeling using graphical, numerical, symbolic, and verbal techniques to describe and explore real-world data and phenomena. The investigation and analysis of applied problems and questions, and of effective communication of quantitative concepts and results.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

MATH 1113. Precalculus. 3 hours.
Preparation for calculus, including an intensive study of algebraic, exponential, logarithmic, and trigonometric functions and their graphs. Applications include simple maximum/minimum problems, exponential growth and decay, and surveying problems.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

MATH 2110. Calculus for Economics. 3 hours.
Not open to students with credit in MATH 2210 or MATH 2210L or MATH 2310H or MATH 2410H.
Prerequisite: MATH 2200 and MATH 2200L.
Topics specifically chosen to meet the needs of the student of economics: the definite integral, functions of several variables, partial derivatives, Lagrange multipliers, and matrices.

MATH 2200. Analytic Geometry and Calculus. 3 hours.
Not open to students with credit in MATH 2300H or MATH 2400H.
Prerequisite: MATH 1113.
Prerequisite or corequisite: MATH 2200L.
Introductory differential calculus and its applications. Topics include limits, continuity, differentiability, derivatives of trigonometric, exponential and logarithmic functions, maximum-minimum problems, curve sketching, Newton's method, and antiderivatives.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

MATH 2200L. Differential Calculus Laboratory. 1 hour. 2 hours lab per week.
Prerequisite or corequisite: MATH 2200 or MATH 2300H or MATH 2400H.
Computer projects exploring topics related to the course content of Analytic Geometry and Calculus.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

MATH 2210. Integral Calculus. 3 hours.
Not open to students with credit in MATH 2110 or MATH 2310H or MATH 2410H.
Prerequisite: MATH 2200 or MATH 2300H or MATH 2400H.
Prerequisite or corequisite: MATH 2210L.
Introductory integral calculus and its applications. Topics include Riemann sums, the Riemann integral, the Fundamental Theorem of calculus, techniques of integration, arc length, surface area, volumes, force, work, and an introduction to differential equations.

MATH 2210L. Integral Calculus Laboratory. 1 hour. 2 hours lab per week.
Prerequisite or corequisite: MATH 2210 or MATH 2310H or MATH 2410H.
Computer projects exploring topics related to the course content of Integral Calculus.

MATH 2300H. Differential Calculus (Honors). 3 hours.
Not open to students with credit in MATH 2200.
Prerequisite: MATH 1113 and permission of Honors.
Corequisite: MATH 2200L.
Honors differential calculus and its applications.

MATH 2310H. Integral Calculus (Honors). 3 hours.
Not open to students with credit in MATH 2110 or MATH 2210 or MATH 2410H.
Prerequisite: (MATH 2200 or MATH 2300H or MATH 2400H) and permission of Honors.
Corequisite: MATH 2210L.
Honors integral calculus.

MATH 2400H. Differential Calculus with Theory (Honors). 4 hours.
Not open to students with credit in MATH 2110 or MATH 2210 or MATH 2310H.
Prerequisite: Permission of Honors.
A more rigorous and extensive treatment of differential calculus. Topics include the real numbers, the least upper bound property, limits, continuity, differentiability, and applications. Students with a strong background and interest in mathematics are encouraged to take this course; prior experience with calculus is not required.

MATH 2410H. Integral Calculus with Theory (Honors). 4 hours.
Not open to students with credit in MATH 2110 or MATH 2210 or MATH 2310H.
Prerequisite: MATH 2400H and permission of Honors.
A more rigorous and extensive treatment of integral calculus. Topics include the Fundamental Theorem of calculus, applications of integration, logarithms and exponentials, Taylor polynomials, sequences, series, and uniform convergence.

MATH 2500. Multivariable Calculus. 3 hours.
Not open to students with credit in MATH 3510.
Prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
Calculus of functions of two and three variables including vectors in two and three dimensions, parametric curves, continuity and differentiability of functions of several variables, directional derivatives, Lagrange multipliers, multiple integration, polar coordinates, Green's theorem, and Stokes' theorem.

MATH 2600. Discrete Mathematics for Biology. 3 hours.
Discrete mathematics topics especially pertinent to applications in computational biology and genetics. Topics include basic set theory and logic, introductory linear algebra, difference equations and stability, counting and discrete probability and distributions, large data structures. Specific biological models are introduced to motivate topics.

(MATH)CSCI 2610. Discrete Mathematics for Computer Science. 4 hours.
Prerequisite: CSCI 1301-1301L.
The fundamental mathematical tools used in computer science: sets, relations, and functions; propositional logic, predicate logic, and inductive proofs; summations, recurrences, and elementary asymptotics; counting and discrete probability; undirected and directed graphs; introductory linear algebra, with applications in computer science.

MATH 2700. Elementary Differential Equations. 3 hours.
Prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
First and second order ordinary differential equations, including physical and biological applications, numerical solutions, and mathematical modeling.

MATH 3000. Introduction to Linear Algebra. 3 hours.
Not open to students with credit in MATH 3500.
Prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
Theory and applications of systems of linear equations, vector spaces, and linear transformations. Fundamental concepts include: linear independence, basis, and dimension; orthogonality, projections, and least squares solutions of inconsistent systems; eigenvalues, eigenvectors, and applications to Markov chains, difference equations, and quadratic forms.

MATH 3100. Sequences and Series. 3 hours.
Prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
Precise definitions of limit and convergence concepts; practical tests for convergence of infinite series; power series representations and numerical error estimates; applications to calculus and explicit summation formulae; trigonometric series.

MATH 3200. Introduction to Higher Mathematics. 3 hours.
Prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
Preparation in mathematical reasoning and proof-writing necessary for upper division course work in mathematics. Topics include logic, integers and induction, sets and relations, equivalence relations and partitions, and functions (including injectivity and surjectivity).

MATH 3500. Multivariable Mathematics I. 3 hours.
Not open to students with credit in MATH 3000.
Prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
Vector algebra and geometry; fundamental concepts of linear algebra; linear transformations; differential calculus of functions of several variables; eigenvalues and applications. The sequence of Multivariable Mathematics gives an integrated and more conceptual treatment of the material in Multivariable Calculus and Introduction to Linear Algebra.

MATH 3510. Multivariable Mathematics II. 3 hours.
Not open to students with credit in MATH 2500.
Prerequisite: MATH 3500.
Inverse function theorem and Jacobians; integration in several variables, the change of variables theorem; line integrals, surface integrals, and Stokes' Theorem; applications to physics.

MATH 3610. Mathematical Methods for Computer Science. 4 hours.
Prerequisite: (MATH 2210 or MATH 2310H or MATH 2410H) and CSCI 1301-1301L.
Mathematical tools and methods for computer science, with emphasis on proof-writing. Logic, set theory, function theory,induction, and other techniques of mathematical proof are developed within the context of discrete mathematics. Topics chosen from combinatorics, graph theory, discrete probability, algorithms, and linear algebra.

MATH 4000/6000. Modern Algebra and Geometry I. 3 hours.
Prerequisite: [(MATH 3000 or MATH 3500) and MATH 3200)] or permission of department.
Abstract algebra, emphasizing geometric motivation and applications. Beginning with a careful study of integers, modular arithmetic, and the Euclidean algorithm, the course moves on to fields, isometries of the complex plane, polynomials, splitting fields, rings, homomorphisms, field extensions, and compass and straightedge constructions.

MATH 4010/6010. Modern Algebra and Geometry II. 3 hours.
Prerequisite: MATH 4000/6000.
More advanced abstract algebraic structures and concepts, such as groups, symmetry, group actions, counting principles, symmetry groups of the regular polyhedra, Burnside's Theorem, isometries of R^3, Galois Theory, and affine and projective geometry.

MATH 4050/6050. Advanced Linear Algebra. 3 hours.
Prerequisite: MATH 4000/6000.
Orthogonal and unitary groups, spectral theorem; infinite dimensional vector spaces; Jordan and rational canonical forms and applications.

MATH 4080/6080. Advanced Algebra. 3 hours.
Prerequisite: MATH 4010/6010 or permission of department.
Linear algebra, groups, rings, and modules, intermediate in level between Modern Algebra and Geometry II and Algebra. Topics include the finite-dimensional spectral theorem, group actions, classification of finitely generated modules over principal ideal domains, and canonical forms of linear operators.

MATH 4100/6100. Real Analysis. 3 hours.
Prerequisite: (MATH 3100 and MATH 3200) or permission of department.
Metric spaces and continuity; differentiable and

integrable functions of one variable; sequences and series of functions.

MATH 4110/6110. The Lebesgue Integral and Applications. 3 hours.
Prerequisite: MATH 4100/6100 or MATH 4200/6200 or permission of department.
The Lebesgue integral with applications to Fourier analysis and probability.

MATH 4120/6120. Multivariable Analysis. 3 hours.
Prerequisite: MATH 3510 or MATH 4100/6100 or MATH 4200/6200.
The derivative as a linear map, inverse and implicit function theorems, change of variables in multiple integrals; manifolds, differential forms, and the generalized Stokes' Theorem.

MATH 4150/6150. Complex Variables. 3 hours.
Prerequisite: (MATH 2500 and MATH 3100) or MATH 3510.
Differential and integral calculus of functions of a complex variable, with applications. Topics include the Cauchy integral formula, power series and Laurent series, and the residue theorem.

MATH 4200/6200. Point Set Topology. 3 hours.
Prerequisite: MATH 3100 and MATH 3200.
Topological spaces, continuity; connectedness, compactness; separation axioms and Tietze extension theorem; function spaces.

MATH 4220/6220. Differential Topology. 3 hours.
Prerequisite: MATH 4120/6120 and (MATH 4100/6100 or MATH 4200/6200).
Manifolds in Euclidean space: fundamental ideas of transversality, homotopy, and intersection theory; differential forms, Stokes' Theorem, deRham cohomology, and degree theory.

MATH 4250/6250. Differential Geometry. 3 hours.
Prerequisite: (MATH 2500 and MATH 3000) or MATH 3510.
The geometry of curves and surfaces in Euclidean space: Frenet formulas for curves, notions of curvature for surfaces; Gauss-Bonnet Theorem; discussion of non-Euclidean geometries.

MATH 4300/6300. Introduction to Algebraic Curves. 3 hours.
Prerequisite: MATH 4000/6000 or permission of department.
Polynomials and resultants, projective spaces. The focus is on plane algebraic curves: intersection, Bezout's theorem, linear systems, rational curves, singularities, blowing up.

MATH 4400/6400. Number Theory. 3 hours.
Prerequisite: MATH 4000/6000.
Euler's theorem, public key cryptology, pseudoprimes, multiplicative functions, primitive roots, quadratic reciprocity, continued fractions, sums of two squares and Gaussian integers.

MATH 4450/6450. Cryptology and Computational Number Theory. 3 hours.
Prerequisite: MATH 4000/6000.
Recognizing prime numbers, factoring composite numbers, finite fields, elliptic curves, discrete logarithms, private key cryptology, key exchange systems, signature authentication, public key cryptology.

MATH 4500/6500. Numerical Analysis I. 3 hours.
Prerequisite: MATH 3000 or MATH 3500.
Prerequisite or corequisite: MATH 3100.
Methods for finding approximate numerical solutions to a variety of mathematical problems, featuring careful error analysis. A mathematical software package will be used to implement iterative techniques for nonlinear equations, polynomial interpolation, integration, and problems in linear algebra such as matrix inversion, eigenvalues and eigenvectors.

MATH 4510/6510. Numerical Analysis II. 3 hours.
Prerequisite: (MATH 2500 or MATH 3510) and MATH 2700 and MATH 4500/6500.
Numerical solutions of ordinary and partial differential equations, higher-dimensional Newton's method, and splines.

MATH 4550/6550. Computer-Aided Curves and Surfaces Design. 3 hours.
Prerequisite: MATH 2500 or MATH 3510.
Bezier curves and spline curves, tensor product Bezier and spline surfaces, Bezier triangular surfaces and triangular spline surfaces, Coons patches, basic differential geometry for curves and surfaces, computer implementation of these curves and surfaces.

MATH 4600/6600. Probability. 3 hours.
Prerequisite: (MATH 2500 and MATH 3100) or MATH 3510.
Discrete and continuous random variables, expectation, independence and conditional probability; binomial, Bernoulli, normal, and Poisson distributions; law of large numbers and central limit theorem.

MATH(CSCI) 4630/6630. Mathematical Analysis of Computer Algorithms. 3 hours.
Prerequisite: MATH 3000 and (MATH 3200 or CSCI(MATH) 2610).
Discrete algorithms (number-theoretic, graph-theoretic, combinatorial, and algebraic) with an emphasis on techniques for their mathematical analysis.

MATH(CSCI) 4670/6670. Combinatorics. 3 hours.
Prerequisite: (MATH 3000 or MATH 3500) and (MATH 3200 or CSCI(MATH) 2610).
Basic counting principles: permutations, combinations, probability, occupancy problems, and binomial coefficients. More sophisticated methods include generating functions, recurrence relations, inclusion/exclusion principle, and the pigeonhole principle. Additional topics include asymptotic enumeration, Polya counting theory, combinatorial designs, coding theory, and combinatorial optimization.

MATH(CSCI) 4690/6690. Graph Theory. 3 hours.
Prerequisite: (MATH 3000 or MATH 3500) and (MATH 3200 or CSCI(MATH) 2610).
Elementary theory of graphs and digraphs. Topics include connectivity, reconstruction, trees, Euler's problem, hamiltonicity, network flows, planarity, node and edge colorings, tournaments, matchings, and extremal graphs. A number of algorithms and applications are included.

MATH 4700/6700. Qualitative Ordinary Differential Equations. 3 hours.
Prerequisite: MATH 2700 and (MATH 3000 or MATH 3500).
Transform methods, linear and nonlinear systems of ordinary differential equations, stability, and chaos.

MATH 4710/6710. Mathematics of Finance. 3 hours.
Undergraduate prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
The mathematical methods and models used in the fields of financial analysis and actuarial science. Covers the theory of interest, models of financial markets including derivative markets, an introduction to risk and models and actuarial mathematics.

MATH 4720/6720. Introduction to Partial Differential Equations. 3 hours.
Prerequisite: MATH 2700 and (MATH 2500 or MATH 3510).
The basic partial differential equations of mathematical physics: Laplace's equation, the wave equation, and the heat equation. Separation of variables and Fourier series techniques are featured.

MATH 4760/6760. Mathematics and Music. 3 hours.
Prerequisite: (MATH 2210 or MATH 2310H or MATH 2410H) and (MATH 2500 or MATH 2700).
This course is intended for undergraduates (math majors, music majors, and others) interested in the mathematical aspects of music. At least some familiarity with musical notation is a prerequisite. Topics to be discussed include the structure of sound, the construction of scales, and synthesis. There is a serious writing component.

MATH 4780/6780. Mathematical Biology. 3 hours.
Prerequisite: MATH 2210 or MATH 2310H or MATH 2410H.
Mathematical models in the biological sciences: compartmental flow models, dynamic system models, discrete and continuous models, deterministic and stochastic models.

MATH 4850/6850. History of Mathematics. 3 hours.
Prerequisite: Senior standing.
The development of mathematical thought from ancient times to the present, paying particular attention to the context of today's mathematics curriculum.

MATH 4900/6900. Topics in Mathematics. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Senior standing.
A special topic not otherwise offered in the mathematics curriculum.

MATH 4960H. Directed Readings and/or Undergraduate Research (Honors). 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, projects, or research under the direction of a project director.
Non-traditional format: Directed study.

MATH 4970H. Directed Readings and/or Undergraduate Research(Honors). 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, projects, or research under the direction of a project director.
Non-traditional format: Directed study.

MATH 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major or in a closely related field.
Non-traditional format: Thesis course.

MATH 5001/7001. Arithmetic and Problem Solving. 3 hours.
Not open to students with credit in MATH 1700.
Topics in mathematics designed for future elementary school teachers. Problem solving. Number systems: whole numbers, integers, rational numbers (fractions) and real numbers (decimals), and the relationships between these systems. Understanding multiplication and division, including why standard computational algorithms work. Properties of arithmetic. Applications of elementary mathematics.

MATH 5002/7002. Geometry and Problem Solving. 3 hours.
Prerequisite: MATH 5001/7001.
A deep examination of mathematical topics designed for future elementary school teachers. Length, area, and volume. Geometric shapes and their properties. Probability. Elementary number theory. Applications of elementary mathematics

MATH 5020/7020. Arithmetic for Middle School Teachers. 3 hours.
Prerequisite: MATH 2200.
Operations of arithmetic for middle school teachers; number systems; set theory to study mappings, functions, and equivalence relations.

MATH 5030/7030. Geometry and Measurement for Middle School Teachers. 3 hours.
Prerequisite: MATH 2200.
Principles of geometry and measurement for middle school teachers.

MATH 5070/7070. Calculus for Advanced Placement Teachers. 3 hours.
Prerequisite: MATH 2500 or MATH 3510.
Variable calculus designed to prepare in-service secondary school teachers for effective instruction of advanced placement students. Emphasizes concepts and principles underlying differential and integral calculus of a single variable.

MATH 5200/7200. Foundations of Geometry I. 3 hours.
Prerequisite: (MATH 3000 or MATH 3500) and (MATH 3200 or MATH 3610).
Advanced elementary geometry for prospective teachers of secondary school mathematics: axiom systems and models; the parallel postulate; neutral, Euclidean, and non-Euclidean geometries.

MATH 5210/7210. Foundations of Geometry II. 3 hours.
Prerequisite: MATH 5200/7200.
Further development of the axioms and models for Euclidean and non-Euclidean geometry; transformation geometry.

MATH 5560/7560. Probability and Statistics for Teachers. 3 hours.
Prerequisite: MATH 2200.
Fundamental ideas of probability with particular emphasis on their applications in statistics.

(MGMT) Management

Terry College of Business, Department of Management

MGMT 3000. Management of Organizations and Individuals. 3 hours.
Not open to students with credit in MGMT 3000H.
Prerequisite: ACCT 2101 and MIST 2090 or CSCI 1100-1100L.
Management functions and processes as applied to organizations and to individuals in organizations. Topics to be covered include strategy, job and organization design, ethics and social responsibility, diversity, global influences, leadership, motivation, human resource management, and organizational change. Other emerging managerial issues may be introduced.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

MGMT 3000H. Management of Organizations and Individuals (Honors). 3 hours.
Not open to students with credit in MGMT 3000.
Prerequisite: ACCT 2101 and MIST 2090 or CSCI 1100-1100L and permission of Honors.
Management functions and processes as applied to organizations and to individuals in organizations. Topics to be covered include strategy, job and organization design, ethics and social responsibility, diversity, global influences, leadership, motivation, human resource management, and organizational change. Other emerging managerial issues may be introduced.

MGMT 4000. Integrated Resource Management. 3 hours.
Not open to students with credit in MGMT 4000H.
Traditional management, total quality management, just-in-time and constraints management philosophies applied to services and manufacturing. Resource management (the integration of these philosophies) focuses on designing, planning, scheduling, executing, controlling, and measuring operations and their relationships with other functions in providing effective business processes to achieve organizational goals.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

MGMT 4000H. Integrated Resource Management (Honors). 3 hours.
Not open to students with credit in MGMT 4000.
Prerequisite: Permission of Honors.
Traditional management, total quality management, just-in-time and constraints management philosophies applied to services and manufacturing. Resource management (the integration of these philosophies) focuses on designing, planning,

scheduling, executing, controlling, and measuring operations and their relationships with other functions in providing effective business processes to achieve organizational goals.

MGMT 4240. Quality Management. 3 hours.
Prerequisite: MGMT 3000.
Managerial, behavioral, technological, and statistical concepts as related to Total Quality Management (TQM). Quality, continuous improvement and productivity are discussed. Focus is on understanding and being able to apply all the concepts throughout any organization (i.e., service, manufacturing, not-for-profit, and governmental).

MGMT 4250. Productivity Management. 3 hours.
Prerequisite: MGMT 3000.
Personal, process, white collar, and organizational productivity concepts, issues, and measurements. Emphasizes combining these new management philosophies in achieving a competitive advantage of time, quality, and price and their impact on organizational profit. Constraint management and process management concepts are applied to support cross-functional problem identification, analysis, solution, and implementation.

MGMT 4260. Service Operations Management. 3 hours.
Prerequisite: MGMT 3000.
Service sector performance and methods designed to improve service sector competitiveness. The operations management decisions in service businesses in relation to productivity, quality, work force management, location, capacity, the effect of new technologies, and international issues.

MGMT 4270. Applications in Operations Management. 3 hours.
Prerequisite: MGMT 4240 or MGMT 4250 or MGMT 5210 or permission of department.
Analysis of organizational problems using traditional, quality, just-in-time, constraint, and process management tools in service and manufacturing case studies and projects. Constraint management logic-based tools are utilized as a framework to identify the core business problem, develop a solution, and construct an implementation plan.

MGMT 4800. Internship or Cooperative Education. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: MGMT 3000 or permission of department.
Students are permitted to enter businesses, governmental agencies, or other organizations for the purposes of obtaining practical and applied managerial experience. A paper or suitable project associated with a description and analysis of this experience is required. Only 3 credit hours may be applied toward the fulfillment of major requirements.
Non-traditional format: Internship.

MGMT 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field.
Non-traditional format: Honors thesis.

MGMT 5000. Special Topics in Management. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Individual study, readings, or projects under the direction of a faculty member in Management or Management Information Systems.
Non-traditional format: Directed study.

MGMT 5210. Materials Management. 3 hours.
Prerequisite: MGMT 3000.
The management of dependent and independent demand inventory items within a manufacturing environment and the examination of the management of finished goods items within a distribution environment. Emphasis is placed on a systems perspective.

MGMT 5220. Project Management. 3 hours.
Prerequisite: MGMT 3000.
The planning, scheduling, organizing, implementing, and controlling of single and multiple projects. Project management is an increasing area of concern and requires significantly different approaches to these traditional activities. This course explores traditional and new techniques for this dynamic environment.

MGMT 5230. Purchasing Management. 3 hours.
Prerequisite: MGMT 3000.
The purchasing function and related functions (traffic, receiving, and surplus material). The relationships among price, quality, and delivery service are illustrated. Japanese purchasing philosophy is contrasted to the United States philosophy in conjunction with techniques of negotiation, sourcing, value analysis, and engineering.

MGMT 5400. Strategic Management. 3 hours.
Not open to students with credit in MGMT 5400H.
Prerequisite: (MGMT 3000 and MARK 3000 and FINA 3000) or permission of department.
The processes by which managers formulate and implement corporate and business strategies in order to achieve the economic and non-economic objectives of their organizations. The course will integrate the students' knowledge of the basic functional disciplines into a general strategic perspective for managing the whole organization.

MGMT 5400H. Strategic Management (Honors). 3 hours.
Not open to students with credit in MGMT 5400.

Prerequisite: (MGMT 3000 and MARK 3000 and FINA 3000) or permission of Honors.
The strategic management processes by which managers formulate and implement corporate and business strategies in order to achieve the economic and non-economic objectives of their organizations. The course will integrate the students' knowledge of the basic functional disciplines into a general strategic perspective for managing the organization as a whole.

MGMT 5420. Business, Society, and Stakeholder Management. 3 hours.
Prerequisite: MGMT 3000.
Explores all aspects of the business and society relationship, including a study of corporate social performance. Focuses on businesses' interactions with key stakeholders, including governments, community, consumers, employees, and the natural environment. Examines corporate public policy from a strategic management perspective.

MGMT 5440. Business Ethics. 3 hours.
Prerequisite: MGMT 3000.
Designed to help students deal with the ethical implications of an increasingly complex business world. Covers methods for analyzing and applying personal values, recognizing organizational and environmental forces that influence ethical behavior, and heightening the student's abilities to recognize ethical issues and engage in effective moral debate in a business setting.
Non-traditional format: This course is also offered through University System of Georgia Independent Study.

MGMT 5500. Entrepreneurship and New Venture Formation. 3 hours.
Prerequisite: (MGMT 3000 and MARK 3000 and FINA 3000) or permission of department.
The contributions that new ventures and small businesses make to the economy and society as a whole, the characteristics of successful entrepreneurs, the process of starting up new businesses, and the primary determinants of new venture performance. The primary course activity involves the preparation of a Business Plan for a "prospective" new venture.

MGMT 5530. Small Business Management. 3 hours.
Prerequisite: MGMT 3000.
The special challenges facing small businesses in today's society. Integrates from a general management perspective the functional knowledge gained in the areas of finance, economics, human resource management, marketing, and operations in order to help prepare the student to manage such businesses.

MGMT 5560. International Strategic Management. 3 hours.
Prerequisite: MGMT 3000.
The major problems that confront managers who operate across international boundaries from a base in a single country or who maintain affiliates and subsidiaries in several national jurisdictions. Major emphasis is given to the problems involved in crossing national boundaries.

MGMT 5580. Strategic Management of Nonprofit Organizations. 3 hours.
Prerequisite: MGMT 3000.
Strategic management of nonprofit organizations, from the entrepreneurship of start-up ventures to the evolving missions of established nonprofits. Specific attention is given to board roles, resource development, and fundraising, as well as to the history and legal basis of the nonprofit sector.

MGMT 5820. Human Resource Management. 3 hours.
Prerequisite: MGMT 3000.
An introduction to human resource management. Human resource planning, staffing, training and development, compensation, safety and health, and labor relations.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

MGMT 5860. Compensation and Performance Management. 3 hours.
Prerequisite: MGMT 3000 or permission of department.
The internal and external determinants of compensation within an organization. Job evaluation, pay structure, employee benefits, and the measurement of employee performance. The total compensation package, including monetary and nonmonetary rewards,will be analyzed as will problems encountered in managing the compensation system.

MGMT 5870. Recruitment, Selection, and Socialization. 3 hours.
Prerequisite: MGMT 3000 or permission of department.
Employee recruitment, selection, and socialization instruments and procedures. Effects of these instruments and procedures on individual and organizational effectiveness are emphasized. Exercises and projects will be used.

MGMT 5920. Organizational Behavior. 3 hours.
Prerequisite: MGMT 3000.
The interpersonal skills that promote individual, group, and organizational effectiveness. Basic concepts, theories, and practices needed to understand human behavior within work organizations. The class activities are varied and interactive,

including experiential exercises, discussions, case analyses, and collaborative learning.

MGMT(SPCM) 5960. Organizational Communication. 3 hours.
Prerequisite: MGMT 3000 or permission of department.
Communication policies, procedures, and practices in administration. Students will have the opportunity to develop both written and oral communication skills and to identify philosophies, methods, and characteristics of management communication.

MGMT 5970. Organizational Change and Innovation Management. 3 hours.
Prerequisite: MGMT 3000.
Key concepts and theories in organizational change and development. The focus is on the student's development of diagnostic skills necessary for the identification of organizational problems and opportunities and the effective management of organizational change.

MGMT 5980. Leadership. 3 hours.
Prerequisite: MGMT 3000.
This course focuses on managerial leadership. A broad survey of theory, research, and practice on leadership in formal organizations. The topic of leadership effectiveness is at the core of this class. Case analyses, experiential exercises, and discussions are used to develop the personal and interpersonal skills needed in leadership roles.

(MIBO) Microbiology

College of Arts and Sciences, Department of Microbiology

MIBO 2500-2500L. Microbiology and Health Care. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: [(BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L] and [(CHEM 1110 and CHEM 1110L) or (CHEM 1211 and CHEM 1211L].
Infectious diseases emphasizing the nature of the organisms, the interrelationship of microorganisms and human hosts, the prevention and control of infectious diseases, and a description of the important infectious diseases of humans.

MIBO 3000-3000L. Introductory Applied Microbiology. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in MIBO 3500 or MIBO 3510L.
Prerequisite or corequisite: (BIOL 1103 and BIOL 1103L and BIOL 1104 and BIOL 1104L) or (BIOL 1107-1107L and BIOL 1108-1108L).
Microorganisms, with special emphasis on the structure, function, and diversity of bacteria and their importance to man.

MIBO 3500. Introductory Microbiology. 3 hours.
Prerequisite or corequisite: BCMB(BIOL)(CHEM) 3100 or BCMB 4020/6020.
Microorganisms, with special emphasis on bacteria, their structure, function, diversity, and importance to man.

MIBO 3510L. Introductory Microbiology Laboratory. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite or corequisite: MIBO 3500 and [BCMB(BIOL)(CHEM) 3100) or BCMB 4020/6020].
General laboratory techniques in experimental microbiology with emphasis on microscopic, morphological, and biochemical analysis.

MIBO 3510H. Introductory Microbiology Laboratory (Honors). 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: MIBO 3500 and [BCMB (BIOL) (CHEM) 3100] and permission of Honors.
General laboratory techniques in experimental microbiology with an emphasis on the isolation, identification, and characterization of bacteria.

MIBO 3900. Directed Study. 3 hours.
Prerequisite: BIOL 1104 and BIOL 1104L or BIOL 1108-1108L.
Independent research in the primary literature in selected areas of microbiology.
Non-traditional format: Directed study.

MIBO 4010/6010. Critical Review of Research in Microbiology. 2 hours. Repeatable for maximum 6 hours credit.
Prerequisite: MIBO 3500 and permission of department.
Corequisite: MIBO 4900L or MIBO 4960H or MIBO 4970H or MIBO 4980H or MIBO 4990H.
Critical analysis and discussion of recent advances in microbiology research through oral presentation. Specific topics may vary but will emphasize molecular biology, physiology, and ecology of prokaryotes.

(MIBO)FDST 4030/6030-4030L/6030L. Food Microbiology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: MIBO 3000-3000L or MIBO 3500.
Interactions of microorganisms with food and the implications of these interactions for food preservation, safety, and fermentations. Pathogenic microorganisms associated with food. Analysis of foods for the presence of microorganisms.

MIBO 4090/6090. Prokaryotic Biology. 3 hours.
Prerequisite: MIBO 3500.
Prerequisite or corequisite: GENE(BIOL) 3200.
Ultrastructure, physiology, genetics, ecology, and phylogeny of bacteria and archaea.

(MIBO)CBIO 4100/6100. Immunology. 3 hours.
Prerequisite: BCMB(BIOL)(CHEM) 3100 and GENE (BIOL) 3200.
Immunology from an experimental perspective. Anatomy, development, and function of the immune system. Immune system in infectious diseases. Mechanisms and pathogenesis of immunological disorders. Evolution of immunological concepts.

(MIBO)FDST 4120/6120-4120L/6120L. Food Fermentations. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: MIBO 3000-3000L or MIBO 3500.
Microbial and technical aspects of dairy, vegetable, meat, grain, and fruit fermentations. Products studied include cheese, sausage, beer, wine, and soy sauce.

MIBO 4220/6220. Pathogenic Bacteriology. 3 hours.
Prerequisite: MIBO 3500.
Molecular basis of bacterial virulence: identification of virulence factors, genetic regulation of virulence, and the complex interactions between bacterial pathogens and their hosts.

MIBO 4300/6300. Environmental Microbiology and Biotechnology. 3 hours.
Prerequisite: MIBO 3500.
Microorganisms used in biotechnology, agriculture, bioremediation, and industry; distribution, taxonomy, and physiology of environmentally significant microorganisms.

(MIBO)(FDST) EHSC 4310/6310-4310L/6310L. Environmental Microbiology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: MIBO 3500.
Types of microorganisms in the environment; effect of environmental conditions on microbial existence; public health aspects of environmental microbiology; applications of microorganisms to solve environmental problems.

(MIBO)FDST(EHSC) 4320/6320-4320L/6320L. Microbiology of Food Sanitation. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: MIBO 3000-3000L or MIBO 3500.
Microorganisms and practices important in food industry sanitation and safety; microorganisms involved and control measures taken to prevent food borne illness, with emphasis on food process operations.

MIBO 4400L/6400L. Experimental Pathogenic Bacteriology. 3 hours. 1 hour lecture and 4 hours lab per week.
Undergraduate prerequisite: GENE(BIOL) 3200.
Undergraduate prerequisite or corequisite: MIBO 4220/6220.
Bacterial virulence factors and dynamic interactions between bacteria and their hosts.

MIBO 4600L/6600L. Experimental Microbiology Laboratory. 3 hours. 6 hours lab per week.
Prerequisite: (MIBO 3500 and MIBO 3510L) or permission of department.
Analysis of bacteria with emphasis on genetics, metabolism, pathogenesis, and diversity.

(MIBO)CRSS 4610/6610-4610L/6610L. Soil Microbiology. 3 hours. 1 hour lecture and 4 hours lab per week.
Microorganisms in soil and their effect on nutrient recycling, especially as it relates to environmental quality and crop production.

(MIBO)MARS 4620/6620-4620L/6620L. Microbial Ecology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: MIBO 3500 or permission of department.
Emphasizes the roles of microorganisms in ecosystems. Nutrient cycles, methods of microbial analysis, and the functional roles of microorganisms.

MIBO 4700/6700. Medical Mycology. 3 hours.
Undergraduate prerequisite or corequisite: MIBO 3500.
The yeasts, molds, and actinomycetes most likely to be encountered by a medical mycologist in a diagnostic laboratory, with special emphasis on the organisms which are pathogenic for man and other animals.

MIBO 4710L/6710L. Medical Mycology Laboratory. 3 hours. 6 hours lab per week.
Undergraduate prerequisite: MIBO 3500 and MIBO 3510L.
Prerequisite or corequisite: MIBO 4700/6700.
Molecular and microscopic methods used to study selected fungal organisms that are pathogenic to humans.

MIBO 4800L/6800L. Microbial Genetics Laboratory. 3 hours. 6 hours lab per week.
Prerequisite: (MIBO 3510L and GENE(BIOL) 3200) or permission of department.
Genetic analysis of bacteria, with emphasis on isolating mutants and mapping, characterizing, and cloning genes.

MIBO 4900L. Directed Research. 4 hours.
Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Independent laboratory research in microbiology under the direction of a faculty member.

Non-traditional format: Students will meet with faculty members on a regular basis.

MIBO 4960H. Honors Research. 4 hours.
Prerequisite: Permission of Honors.
Independent laboratory research for students in microbiology, under the direction of a faculty member.
Non-traditional format: Students will meet with faculty members on a regular basis.

MIBO 4970H. Honors Research. 4 hours.
Prerequisite: MIBO 4960H and permission of Honors.
Independent laboratory research for students in microbiology, under the direction of a faculty member.
Non-traditional format: Students will meet with faculty members on a regular basis.

MIBO 4980H. Honors Research. 4 hours.
Prerequisite: MIBO 4970H and permission of Honors.
Independent laboratory research for students in Microbiology, under the direction of a faculty member.
Non-traditional format: Students will meet with faculty members on a regular basis.

MIBO 4990H. Honors Thesis. 4 hours.
Prerequisite: Permission of Honors.
Preparation of Honors thesis in microbiology under the direction of a faculty member. The final course in Honors research.
Non-traditional format: Students will meet with faculty members on a regular basis.

(MILS) Military Science

Division of the Armed Services, Department of Military Science

MILS 1010. Introduction to the Army I. 2 hours.
Prerequisite: Freshman standing or permission of department.
The study of the organization, constitutional basis, and interrelationships of the United States Army, Army Reserves, and National Guard. An introduction of United States military weapon systems, task force organization, and the conduct of military operations. Familiarization of basic military skills such as first aid, drill and ceremonies, and radio communications.

MILS 1020. Introduction to the Army II. 2 hours.
Prerequisite: Freshman standing or permission of department.
The study of basic military skills with special emphasis on basic rifle marksmanship and small unit tactics. Introduction to threat-nation weapons systems, equipment, and organizations. Analysis of recent or ongoing military operations worldwide.

MILS 2010. Advanced Military Skills I. 2 hours.
Prerequisite: Freshman or sophomore standing or permission of department.
Advanced first aid skills and an introduction to the art of basic map reading and land navigation including the study of topographic maps, terrain evaluation and the use of a lensatic compass. Students will also receive preliminary instruction on orienteering and associated skills.

MILS 2020. Advanced Military Skills II. 2 hours.
Prerequisite: Freshman or sophomore standing or permission of department.
Small unit tactics, operations, and troop leading procedures to include the combined arms teams to the platoon with primary emphasis on the rifle squad; a study of military leadership and leadership assessment, with an emphasis on the role of officers and non-commissioned officers in the United States Army.

MILS 3010. Applied Leadership and Management I. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: MILS 1010 and MILS 1020 and MILS 2010 and MILS 2020 and permission of department.
Psychological, physiological, and sociological factors which affect human behavior. Analysis of leadership and management processes. Techniques in planning, presenting, and evaluating performance instruction, to include practical application.

MILS 3020. Applied Leadership and Management II. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: MILS 1010 and MILS 1020 and MILS 2010 and MILS 2020 and permission of department.
Tactics applied at the platoon and company level to include a study of the modern battlefield and current military tactical doctrine. Planning, directing, and coordinating the efforts of individuals and small units in the execution of offensive and defensive tactical missions.

MILS 4010. Seminar in Leadership and Management I. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: MILS 3010 and MILS 3020 and permission of department.
Analysis of selected leadership and management problems. Responsibilities of the commander and staff in areas of personnel, intelligence, operations, logistics, and administration of military law. Also a study of the inter-relationships of the military team.

MILS 4020. Seminar in Leadership and Management II. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: MILS 3010 and MILS 3020 and permission of department.
Practical applications of duties and responsibilities of United States Army second lieutenants, with an emphasis on ethics and personnel actions. Analysis of military principles and doctrine by studying an actual battle and conducting a battle staff ride.

MILS 5010. Directed Studies in Military Science I. 1 hour. 1 hour lecture and 1 hour lab per week.
Prerequisite: MILS 4010 and MILS 4020 and permission of department.
Special projects designed to develop skills beyond those taught in the standard ROTC program.

MILS 5020. Directed Studies in Military Science II. 1 hour. 1 hour lecture and 1 hour lab per week.
Prerequisite: MILS 4010 and MILS 4020 and permission of department.
Special projects designed to develop skills beyond those taught in the standard ROTC program.

(MIST) Management Information Systems

Terry College of Business, Department of Management Information Systems

MIST 2090. Introduction to Information Systems in Business. 3 hours.
Not open to students with credit in CSCI 1100-1100L or MGMT 2190 or MGMT 2090H.
Computer concepts and information technology in business, including hardware and software concepts, fundamentals of information systems, telecommunications, and business-related software packages.
Non-traditional format: This course is also offered through University System of Georgia Independent Study.

MIST 2190H. Introduction to Information Systems in Business (Honors). 3 hours.
Not open to students with credit in CSCI 1100-1100L or MGMT 2090 or MGMT 2190H.
Prerequisite: Permission of Honors.
Computer concepts and information technology in business, including hardware and software concepts, fundamentals of information systems, telecommunications, and business-related software packages.

MIST 4600. Computer Programming in Business. 3 hours.
Not open to students with credit in MGMT 4600.
Prerequisite: MIST 2090 or MIST 2190H or CSCI 1100-1100L.
Introduction to computer programming. Fundamentals of systems analysis and program development using top-down design; structured programming; and debugging, testing and implementation; elementary data structures.

MIST 4610. Data Management. 3 hours.
Not open to students with credit in MGMT 4610.
Prerequisite: MIST 2090 or MIST 2190H or CSCI 1100-1100L.
Data management, including database development, access, and administration. The focus is on issues and principles of managing organizational data. Students will get extensive experience in developing data models, creating relational databases, and formulating and executing complex queries.

MIST 4620. Systems Analysis and Design. 3 hours.
Not open to students with credit in MGMT 4620.
Prerequisite: MIST 4600 and MIST 4610.
Structured systems analysis and design with emphasis on the development of business application systems. Methods of systems documentation are examined through the use of tools and techniques for describing process flows, data flows, data structures, system objects, file designs, input and output designs, and program specifications.

MIST 4700. Management Information Systems Internship or Cooperative Education. 3 hours.
Not open to students with credit in MGMT 4700.
Prerequisite: MGMT 3000 and MIST 4600 and MIST 4610 and permission of department.
Students are permitted to enter businesses, governmental agencies, or other organizations for the purposes of obtaining practical and applied management information systems experience. A paper or suitable project associated with a description and analysis of this experience is required.

MIST 5600. Special Topics in Management Information Systems. 3 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in MGMT 5600.
Prerequisite: MIST 4600 and MIST 4610.
The management information systems field evolves rapidly and covers many topic areas. Recent developments in areas such as office automation, data communications, and the implementation of management information systems.

MIST 5620. Business Intelligence. 3 hours.
Not open to students with credit in MGMT 5620.
Prerequisite: MIST 4600 and MIST 4610.
Business intelligence provides the highest level of information support to aid the manager in the decision-making process. This course provides the

skills necessary to conceptualize, build, and implement systems utilizing business intelligence in organizations.

MIST 5630. Building Knowledge-Based Systems. 3 hours.
Not open to students with credit in MGMT 5630.
Prerequisite: MIST 4600 and MIST 4610.
Provides the student with knowledge engineering skills required to elicit and represent human knowledge, and to build, implement, and maintain knowledge-based systems in organizations.

MIST 5640. Internet Technology and Strategy. 3 hours.
Not open to students with credit in MGMT 5640.
Prerequisite: MIST 4600 and MIST 4610.
The modern world of Internet technology. Exposure to basic technology concepts, standards, products, services, and developing events. The course covers the basics of electronic commerce, e-commerce strategy, customer resource management, supply chain management, and security.

MIST 5660. Rapid Application Development. 3 hours.
Not open to students with credit in MGMT 5660.
Prerequisite: MIST 4620.
The use of rapid application development (RAD), prototyping, and end user development. Students use appropriate software tools to quickly build applications.

MIST 5670. Managing the Information System Resource. 3 hours.
Not open to students with credit in MGMT 5670.
Prerequisite: MIST 4620.
The issues and management techniques involved in administering the Information System/Resource activities in an organization. The focus is on computer-based resources and IS development activities. Management of IS professionals, development and management of project teams, user-professional relationships, emerging technologies, and planning processes. A sociotechnical perspective is emphasized.

MIST 5680. Building Executive Support Systems. 3 hours.
Not open to students with credit in MGMT 5680.
Prerequisite: MIST 4600 and MIST 4610.
Executive Information Systems (EIS) provide support to executives who have special information requirements to perform their job responsibilities. Organizational and technical concepts, development approaches, technologies, applications, and impacts are discussed. Hands-on experience is provided with several state-of-the-art EIS.

MIST 5700. Using Business Application Software. 3 hours.
Not open to students with credit in MGMT 5700 or MGMT 5710.
Prerequisite: MIST 2090 and permission of department.
Using a variety of types of business application software to enable the student to be personally productive in the workplace by being able to gather data, analyze it, and present it to others. Popular software suites are covered as is the use of Internet software. (Cannot be taken for credit by MIS majors.)

MIST 5710. Advanced Business Application Software. 3 hours.
Not open to students with credit in MGMT 5700 or MGMT 5710.
Prerequisite: MIST 4600 and MIST 4610.
A variety of types of business application software that enable the student to be personally productive in the workplace by being able to gather data, analyze it, and present it to others. Students are expected to use programming and database skills to carry out these activities.

MIST 5720. Collaborative Work Systems. 3 hours.
Not open to students with credit in MGMT 5720.
Prerequisite: MIST 4600 and MIST 4610.
People work in groups on common tasks. Collaborative computing, in particular, group support systems (GSS), provides support to groups of people. Organizational and technical concepts, development approaches, technologies, applications, and impacts are discussed. Hands-on experience is provided with several state-of-the-art GSS.

MIST 5770. Advanced Software Development in Business. 3 hours.
Not open to students with credit in MGMT 5770.
Prerequisite: MIST 4600 and MIST 4610.
Multi-user operating systems and a leading personal computer programming language are used to create advanced software applications. The use of computers in networks are emphasized.

(MMIB) Medical Microbiology

College of Veterinary Medicine, Department of Medical Microbiology

MMIB 4100/6100-4100L/6100L. Medical Immunology. 3 hours. 3 hours lecture and 3 hours lab per week.
Not open to students with credit in CBIO(MIBO) 4100/6100.
Prerequisite: MIBO 3500 and BCMB (BIOL) (CHEM) 3100.
The mechanism of the immune response, host

resistance to infection, serologic testing methods, and in vitro cellular testing procedures.

MMIB 4220/6220. Pathogenic Bacteriology. 3 hours.
The morphological, physiological, and pathogenic mechanisms of the important pathogenic bacterial agents; their relation to health and disease.

MMIB 4390/6390-4390L/6390L. Clinical Diagnostic Microbiology. 4 hours. 3 hours lecture and 4 hours lab per week.
Prerequisite: MMIB 4220/6220.
The application of basic diagnostic problems associated with the recovery of disease organisms from clinical material. Methodology and problems involved in laboratory isolation and identification. Methods will also include molecular and automated applications.

MMIB 4450/6450. Molecular Bacteriology. 3 hours.
Not open to students with credit in MIBO 4800L/6800L.
Prerequisite: MIBO 3500.
Techniques involved in identifying bacterial genes and discerning their function. The general principles behind cloning, nucleic acid hybridizations, and PCR. Issues concerning scientific integrity and patent issues.

MMIB 4500/6500-4500L/6500L. Virology. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: [MIBO 3500 and BCMB (BIOL) (CHEM) 3100] or permission of department.
The basic principles and concepts of virology. The major emphasis will be on vertebrate viruses. Subjects covered in this course include classification, replication, diagnosis, quantification, pathogenesis, epidemiology, and viral neoplasia.

(MSIT) Management Sciences and Information Technology

Terry College of Business, Department of Insurance, Legal Studies, and Real Estate

MSIT 3000. Statistical Analysis for Business I. 3 hours.
Not open to students with credit in MSIT 3000H or STAT 3000.
Prerequisite: (ACCT 2101 and MIST 2090) or CSCI 1100-1100L.
Application of statistics to business. Descriptive statistics, sampling procedures, random variables, sampling distributions of the means and proportions, estimation and inference, simple linear regression, an introduction to multiple regression, and categorical data models are emphasized. A current statistical software package for microcomputers is utilized to analyze business data.

MSIT 3000H. Statistical Analysis for Business I (Honors). 3 hours.
Not open to students with credit in MSIT 3000 or STAT 3000.
Prerequisite: [(ACCT 2101 and MIST 2090) or CSCI 1100-1100L] and permission of Honors.
Application of statistics to business. Descriptive statistics, sampling procedures, random variables, sampling distributions of the means and proportions, estimation and inference, simple linear regression, an introduction to multiple regression, and categorical data models are emphasized. A current statistical software package for microcomputers is utilized to analyze business data.

MSIT 4130. Statistical Analysis for Business II. 3 hours.
Prerequisite: MSIT 3000.
Application of statistics to business. Inference and estimation of parameters from two populations. Multiple regression, forecasting and time series and analysis of categorical data. A current statistical software package for microcomputers is utilized to analyze business data.

MSIT 4900H. Internet Connectivity and the Corporate Computer Resource (Honors). 3 hours.
Prerequisite: Permission of Honors.
Large-corporation computing resource model consisting of a mission critical mainframe or supercomputing core, Sun-type workstations for the technical staff, networks of PCs and Macs, and Internet usage across the rest of the organization. Hands-on usage of prominent software packages at each level and the sharing of files across platforms.

MSIT 5130. Spreadsheets as a Management Science Tool. 3 hours.
Prerequisite: MSIT 3000.
The formulation and application of management science models, and their implementation via spreadsheets, to problems in business. Linear, integer and nonlinear optimization models; network flow, and multicriteria models; waiting line, inventory and other stochastic models; simulation analysis.

MSIT 5470. Artificial Intelligence in Business. 3 hours.
Prerequisite: MSIT 5130.
Role of artificial intelligence and expert systems in business. Emphasis is on artificial intelligence and on the design, testing, validation, and use of expert systems. Computer-based projects and the study of existing systems will be employed to reinforce concepts.

MSIT 5990. Directed Study in Management Science. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Field study projects or individually investigated specialized areas in management science under faculty direction.
Non-traditional format: Individually directed research projects outside of traditional classroom environment.

(MUSI) Music

College of Arts and Sciences, School of Music

MUSI 1100. Music Theory I. 3 hours.
Prerequisite: Permission of department.
Corequisite: MUSI 1110.
Music fundamentals and the beginning of diatonic harmony, part-writing, and analysis. Includes survey of music literature involving European, World, and American traditions.

MUSI 1110. Aural Skills I. 1 hour. 1 hour lecture and 1 hour lab per week.
Prerequisite: Permission of department.
Corequisite: MUSI 1100.
Fundamentals of ear training involving aural perception of materials of Music Theory I. Laboratory in aural skills drill and keyboard harmony included.

MUSI 1120. Music Theory II. 3 hours.
Prerequisite: MUSI 1100 and MUSI 1110.
A continuation of the material of Music Theory I through more complex diatonic part-writing and analysis through beginning chromatic harmony and analysis. Keyboard harmony work is included.

MUSI 1130. Aural Skills II. 1 hour. 1 hour lecture and 1 hour lab per week.
Prerequisite: MUSI 1100 and MUSI 1110.
Ear training involving diatonic and beginning chromatic materials.

MUSI 1810. Applied Music Instruction. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Applied instruction in a musical instrument or voice for the first semester of the freshman year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 1820. Applied Music Instruction. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: MUSI 1810 or permission of department.
Applied instruction in a musical instrument or voice for the second semester of the freshman year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 2020. Introduction to Music. 3 hours.
The art of music listening involving study of the evolution of a wide range of musical styles from both western and non-western traditions. The course's approach is substantially chronological with elements of music also being covered.

MUSI 2040. History of Popular Music. 3 hours. Repeatable for maximum 6 hours credit.
Rotating subjects in popular music, drawing upon a wide variety of influences and ethnicities. Course content will be drawn from such topics as jazz, Hispanic styles and influences, folksong, and American musical theatre.

MUSI 2060. History of Rock and Roll. 3 hours.
Rock and roll music from its origins to the present. The sociology and origins from African American Blues to present styles and the role of Georgia and Athens in the current music scene.

MUSI 2080. African American Music. 3 hours.
African American music and musical influences involving serious and popular styles and approaches. Jazz and blues influences, slave traditions, and early vaudeville and other music for the stage, sacred and secular vocal/choral traditions ranging from European influences to concert spirituals.

MUSI 2100. Music Theory III. 3 hours.
Prerequisite: MUSI 1120 and MUSI 1130.
Chromatic harmony involving part-writing, composition, and analysis.

MUSI 2110. Aural Skills III. 1 hour. 1 hour lecture and 1 hour lab per week.
Prerequisite: MUSI 1130 or permission of department.
Corequisite: MUSI 2100.
Ear training involving chromatic melodic and harmonic materials.

MUSI 2120. Music Theory IV. 3 hours.
Prerequisite: (MUSI 2100 and MUSI 2110) or permission of department.
Advanced chromatic harmony and contemporary compositional methods and materials.

MUSI 2130. Aural Skills IV. 1 hour. 1 hour lecture and 1 hour lab per week.
Prerequisite: (MUSI 2100 and MUSI 2110) or permission of department.

Ear training involving advanced chromatic harmony and contemporary materials.

MUSI 2200H. History and Analysis of Music (Honors). 3 hours.
Not open to students with credit in MUSI 2020.
Prerequisite: Permission of Honors.
Elements of music and the broad evolution of musical styles from both western and non-western traditions. After learning a basic vocabulary and surveying major periods in music history, students will explore individual musical topics and participate in class discussions on the creation, performance, and reception of music.

MUSI 2400. Voice Class I. 1 hour.
Prerequisite: Permission of department.
Basic principles and methods of vocal performance and pedagogy.

MUSI 2410. Voice Class II. 1 hour.
Prerequisite: MUSI 2400 or permission of department.
Basic principles and methods of vocal performance and pedagogy.

MUSI 2420. Voice Class III. 1 hour.
Prerequisite: MUSI 2410 or permission of department.
Basic principles and methods of vocal performance and pedagogy.

MUSI 2430. Voice Class IV. 1 hour.
Prerequisite: MUSI 2420 or permission of department.
Basic principles and methods of vocal performance and pedagogy.

MUSI 2440. Voice Class V. 1 hour.
Prerequisite: MUSI 2430 or permission of department.
Basic principles and methods of vocal performance and pedagogy.

MUSI 2450. Voice Class VI. 1 hour.
Prerequisite: MUSI 2440 or permission of department.
Basic principles and methods of vocal performance and pedagogy.

MUSI 2460. Voice Class for the Non-Music Major. 1 hour. Repeatable for maximum 2 hours credit.
Basic principles and methods of vocal performance and pedagogy for the non-music major.

MUSI 2500. Piano Class I. 1 hour.
Prerequisite: Permission of department.
Functional keyboard skills for satisfying the piano proficiency requirement.

MUSI 2510. Piano Class II. 1 hour.
Prerequisite: MUSI 2500 or permission of department.
Functional keyboard skills for satisfying the piano proficiency requirement.

MUSI 2520. Piano Class III. 1 hour.
Prerequisite: MUSI 2510 or permission of department.
Functional keyboard skills for satisfying the piano proficiency requirement.

MUSI 2530. Piano Class IV. 1 hour.
Prerequisite: MUSI 2520 or permission of department.
Functional keyboard skills for satisfying the piano proficiency requirement. The exam for this semester is the piano proficiency.

MUSI 2540. Piano Class V. 1 hour.
Prerequisite: MUSI 2530 or permission of department.
Functional keyboard skills for students who have completed the piano proficiency requirement.

MUSI 2550. Piano Class VI. 1 hour.
Prerequisite: MUSI 2540 or permission of department.
Functional keyboard skills for students who have completed the piano proficiency requirement.

MUSI 2700. Men's Glee Club. 1 hour. Repeatable for maximum 4 hours credit.
Concentration on choral literature for men's voices from all periods of music history, including sacred, secular, folk, and popular music.

MUSI 2710. Women's Glee Club. 1 hour. Repeatable for maximum 4 hours credit.
Concentration on choral literature for women's voices from all periods of music history, including sacred, secular, folk, and popular music.

MUSI 2720. Concert Band. 1 hour. Repeatable for maximum 4 hours credit.
A concert band open to all students who have had previous experience in instrumental music.

MUSI 2730. African American Choral Ensemble. 1 hour. Repeatable for maximum 4 hours credit.
A choral ensemble performing traditional and contemporary black gospel, spiritual, and popular music, and music by contemporary black composers.

MUSI 2740. University Symphony Orchestra. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
A course for instrumentalists who can qualify.

MUSI 2750. University Chorus. 1 hour. Repeatable for maximum 4 hours credit.
Concentration on choral literature for mixed voices from all periods of music history, including sacred, secular, and popular music.

MUSI 2760. Concert Choir. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Concentration on choral literature for mixed voices from all periods of music history, including sacred, secular, and popular music. Audition is required.

MUSI 2770. University Band. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Instrumental performance organization open to students who can qualify by audition.

MUSI 2780. Jazz Bands. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Jazz ensemble with improvisation laboratory. Audition is required.

MUSI 2800. Contemporary Chamber Ensemble. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Concentration on modern literature for small and large ensembles. Open to students who can qualify by audition.

MUSI 2810. Applied Music Instruction. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: MUSI 1820 or permission of department.
Applied instruction for music majors in a musical instrument, voice, or composition for the first semester of the sophomore year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 2812. Applied Composition Instruction. 2 hours.
Prerequisite: MUSI 1120 and MUSI 1130.
Applied instruction for music majors in composition for the first semester of the sophomore year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 2820. Applied Music Instruction. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: MUSI 2810 or permission of department.
Applied instruction for music majors in a musical instrument, voice, or composition for the second semester of the sophomore year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 2822. Applied Composition Instruction. 2 hours.
Prerequisite: MUSI 2812.
Applied instruction for music majors in composition for the second semester of the sophomore year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 2840. Symphonic Wind Ensemble. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Mixed woodwind-brass-percussion ensemble for the study and performance of wind chamber compositions with concentration on advanced scores. Professional level experience.

MUSI 2850. Opera Ensemble. 1 hour. Repeatable for maximum 4 hours credit.
Performance of operatic literature.
Non-traditional format: This is a performance group that requires additional rehearsal time to function. The additional time will account for what would ordinarily be homework in regular courses. This format is typical of institutions of our size that offer this class.

MUSI(AFAM) 2960. African American Percussive Music: From Africa to the Americas. 3 hours. Repeatable for maximum 6 hours credit.
Traditional and contemporary African American percussion music beginning with its African heritage and tracking its development throughout the Americas, with particular emphasis on the United States. Teaching/learning strategies include in-class performance, demonstrations, audiovisuals, and lectures. No previous music performance background is required.

MUSI 3020. World Music Survey: Africa, Europe, and the Americas. 3 hours.
Surveys music cultures of Africa, Europe, and the

Americas excluding western art music. An exploration of their structures, forms, instruments, performance practices, contexts, and roles in social, cultural, and global systems.

MUSI 3021. World Music Survey: Middle East, Asia, and Oceana. 3 hours.
Survey of music cultures from the Middle/Near East, Asia, and Oceana. An exploration of their structures, forms, instruments, performance practices, contexts, and role in social, cultural, and global systems.

MUSI 3050. Music Skills and Fundamentals for Elementary School Teachers. 3 hours.
Prerequisite: Permission of department.
The basic skills and fundamentals of music for the elementary and early childhood classroom teacher.

MUSI 3110. Music Techniques and Experiences for Children. 3 hours.
Prerequisite: MUSI 2120 or MUSI 2130 or permission of department.
Corequisite: MUSI 3120.
Methods and field experience for music education majors. Course consists of a survey of effective teaching techniques, research in learning, and materials, including use of technology and multicultural materials.

MUSI 3120. Music Literature for Children. 2 hours.
Prerequisite: MUSI 2120 or MUSI 2130 or permission of department.
Music literature available for use in public school at all levels of instruction for band, orchestra, and/or chorus.

MUSI 3130. Choral Techniques and Field Experience. 3 hours.
Prerequisite: MUSI 2120 or MUSI 2130 or permission of department.
Methods and field experience for music education majors with specialization in choral music. Course involves effective teaching techniques, research in teaching/learning, and materials, including technology and multicultural materials.

MUSI 3140. Choral Literature. 2 hours.
Prerequisite: MUSI 2120 or MUSI 2130 or permission of department.
Music literature available for use in public school at all levels of instruction for chorus. This course is for music education majors with choral emphasis.

MUSI 3150. Instrumental Techniques and Field Experience. 3 hours.
Prerequisite: MUSI 3110 and MUSI 3120 and permission of department.
Methods and field experience for instrumental music education majors. Course involves effective teaching techniques, research in teaching/learning, and materials, including technology and multicultural materials.

MUSI 3190. Composition Lab. 1 hour. Repeatable for maximum 6 hours credit.
Not open to students with credit in MUSI 1810.
Elementary exercises and study of composition for non-music majors and music majors not majoring in composition.

MUSI 3210. Music History I. 3 hours.
Prerequisite: MUSI 2120 and MUSI 2130.
History of western music from its beginnings through the Baroque era.

MUSI 3220. Music History II. 3 hours.
Prerequisite: MUSI 2120 and MUSI 2130.
The history of western music from the Classical style period to the present day.

MUSI 3240. Instrumentation and Arranging. 1 hour.
Prerequisite: MUSI 2120 and MUSI 2130.
Basic instrumentation for all instruments (including basic vocal types) involving ranges, characteristics, and basic arranging.

MUSI 3400. Guitar Techniques. 1-2 hours. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Basic principles and methods of guitar performance and pedagogy.

MUSI 3410. String Instrumental Techniques. 1-2 hours. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Basic principles and methods of string performance and pedagogy.

MUSI 3420. Woodwind Instrumental Techniques. 1-2 hours. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Basic principles and methods of woodwind performance and pedagogy.

MUSI 3430. Brass Instrumental Techniques. 1-2 hours. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Basic principles and methods of brass instrument performance and pedagogy.

MUSI 3440. Percussion Techniques. 1-2 hours. Repeatable for maximum 2 hours credit.
Prerequisite: Permission of department.
Basic principles and methods of percussion performance and pedagogy.

MUSI 3450. Vocal Pedagogy. 2 hours.
Prerequisite: Permission of department.
Survey course in the study of vocal pedagogy, taught in conjunction with Vocal Pedagogy.

MUSI 3460. Piano Pedagogy I. 1-2 hours.
Prerequisite: Permission of department.
Piano teaching, surveying elementary methods and materials for teaching beginners.

MUSI 3470. Keyboard Musicianship. 1 hour.
Prerequisite: Permission of department.
Functional keyboard skills for satisfying the piano proficiency for piano majors with special focus on sight-reading skills.

MUSI 3480. Introduction to Conducting. 2 hours.
Prerequisite: Permission of department.
Basic principles, techniques, and methods of conducting and interpretation.

MUSI 3490. Choral Conducting. 2 hours.
Prerequisite: MUSI 3480.
Rehearsal, interpretive and conducting techniques, and methods for choral organizations.

MUSI 3500. Band Conducting. 2 hours.
Prerequisite: MUSI 3480.
Rehearsals, interpretive and conducting techniques, and methods for band organizations.

MUSI 3510. Orchestra Conducting. 2 hours.
Prerequisite: MUSI 3480.
Rehearsal, interpretive and conducting techniques, and methods for orchestra.

MUSI 3520. Piano Accompanying. 1 hour.
Prerequisite: MUSI 3470.
Practical experience in chamber music, piano duets, and accompanying.

MUSI 3550. Music Theory for Non-Majors. 3 hours.
Not open to students with credit in MUSI 1100 or MUSI 1110.
The fundamentals of music and their application in composition and analysis.

MUSI 3800. Applied Music Instruction for Music Minors. 1-2 hours. Repeatable for maximum 16 hours credit.
Not open to students with credit in MUSI 3810 or MUSI 3820.
Prerequisite: Permission of department.
Applied instruction for music minors in a musical instrument or voice.
Non-traditional format: One-hour or thirty minute weekly lessons in a major or secondary applied instrument, voice, or composition. Credit hours vary according to student ability and reflect differing performance expectations and literature difficulty.

MUSI 3810. Applied Music Instruction. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: MUSI 2820.
Applied instruction for music majors in a musical instrument, voice, or composition for the first semester of the junior year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 3812. Applied Composition Instruction. 3 hours.
Prerequisite: MUSI 2822.
Applied instruction for music majors in composition for the first semester of the junior year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 3820. Applied Music Instruction. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: MUSI 3810.
Applied instruction for music majors in a musical instrument, voice, or composition for the second semester of the junior year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 3822. Applied Composition Instruction. 3 hours.
Prerequisite: MUSI 3812.
Corequisite: MUSI 3910.
Applied instruction for music majors in composition for the second semester of the junior year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 3830. String Pedagogy. 2 hours.
Prerequisite: Permission of department.
Instruction in pedagogy for all bowed string instruments. Class and studio teaching methods will be explored.

MUSI 3910. Junior Recital in Music. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: MUSI 2820 or MUSI 3810.
Corequisite: MUSI 3810 or MUSI 3820.
Required recital for music majors in a musical instrument, voice, or composition.

MUSI 4000. Directed Independent Study in Music. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Independent research topics in any field of music directed by a faculty member.
Non-traditional format: Directed independent study.

MUSI 4050. Music Theory Review. 2 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Visual and aural skills for entering graduate students in need of remediation.

MUSI 4100/6100. Tonal Theory and Analysis. 2 hours.
Prerequisite: (MUSI 2120 and MUSI 2130) or MUSI 4050.
Chromatic harmonic analysis and analytical methods.

MUSI 4110/6110. Introduction to Counterpoint. 3 hours.
Prerequisite: (MUSI 2120 and MUSI 2130) or MUSI 4050.
Analysis and composition using sixteenth and eighteenth-century compositional techniques.

MUSI 4120/6120. Form and Analysis. 3 hours.
Prerequisite: (MUSI 2120 and MUSI 2130) or MUSI 4050.
Analysis of form focusing on music from the seventeenth, eighteenth, and nineteenth centuries.

MUSI 4130/6130. Electronic Music Composition I. 3 hours.
Prerequisite: (MUSI 2120 and MUSI 2130) or MUSI 4050.
Electronic music techniques, focusing on classical and MIDI applications.

MUSI 4140/6140. Eighteenth-Century Counterpoint. 3 hours.
Prerequisite: MUSI 4110/6110.
Eighteenth-century counterpoint focusing on invention, canon, and fugue in the works of J.S. Bach.

MUSI 4200/6200. Ancient, Medieval, and Renaissance Music. 3 hours.
Prerequisite: MUSI 3210 and MUSI 3220.
Music from Greek and Roman society to ca. 1600.

MUSI 4210/6210. Music in the Baroque Period. 3 hours.
Prerequisite: MUSI 3210 and MUSI 3220.
Musical styles and forms from Monteverdi through Bach and Handel.

MUSI 4220/6220. Music in the Classic Period. 3 hours.
Prerequisite: MUSI 3210 and MUSI 3220.
Chamber, orchestral, keyboard, and operatic works from the middle and late eighteenth century.

MUSI 4230/6230. Music in the Romantic Period. 3 hours.
Prerequisite: MUSI 3210 and MUSI 3220.
Emphasis on the development of song, symphony, chamber music, and opera.

MUSI 4240/6240. Modern Music. 3 hours.
Prerequisite: MUSI 3210 and MUSI 3220.
Modern trends in music from Schoenberg, Stravinsky, Hindemith, and Bartok to the present.

MUSI 4250/6250. Women and Music. 3 hours.
Prerequisite: (MUSI 3210 and MUSI 3220) or permission of department.
Roles of women in music, including the history of women musicians in western art music, world cultures, and popular music; gender studies in music.

MUSI 4260/6260. Opera Literature. 2 hours.
Prerequisite: MUSI 3210 and MUSI 3220.
Representative operas from the Baroque era to the twentieth century.

MUSI 4270/6270.Topics in Musical Cultures of the World. 3 hours.
Prerequisite: MUSI 3020 or MUSI 3021 or permission of school.
In-depth study of the music of a select culture, area, topic, or genre. Investigates historical aspects, social functions, aesthetic preferences, the musician, musical instruments, structures and forms, performance contexts, and practices.

MUSI 4280/6280. Instrumental/Vocal/Choral Literature. 2 hours.
Prerequisite: (MUSI 3210 and MUSI 3220) or permission of department.
Solo, sonata, and ensemble music composed for winds, brass, strings, piano and harpsichord, organ or voice, dating from the earliest appropriate period to the present.

MUSI 4460. Piano Pedagogy II. 1-2 hours.
Prerequisite: MUSI 3460.
Survey of supplementary teaching materials for elementary and intermediate level piano students.

MUSI 4700. Men's Glee Club. 1 hour. Repeatable for maximum 4 hours credit.
Concentration on choral literature for men's voices from all periods of music history, including sacred, secular, folk, and popular music.

MUSI 4710. Women's Glee Club. 1 hour. Repeatable for maximum 4 hours credit.
Concentration on choral literature for women's voices from all periods of music history, including sacred, secular, folk, and popular music.

MUSI 4720. Concert Band. 1 hour. Repeatable for maximum 4 hours credit.
A concert band open to all students who have previous instrumental experience.

MUSI 4730/6730. African American Choral Ensemble. 1 hour. Repeatable for maximum 4 hours credit.
Performance of traditional and contemporary black gospel, spiritual, and popular music.

MUSI 4740/6740. University Symphony Orchestra. 1 hour. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Performance of orchestral literature of various styles and genres.

MUSI 4750/6750. University Chorus. 1 hour. Repeatable for maximum 8 hours credit.
Performance of choral literature for mixed voices from all periods of music history, including sacred, secular, folk, and popular music.

MUSI 4760/6760. Concert Choir. 1 hour. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Performance of choral literature for mixed voices from all periods of music history, including sacred, secular, folk, and popular music.

MUSI 4770. University Band. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Instrumental group open to students who can qualify.

MUSI 4780/6780. Jazz Bands. 1 hour. Repeatable for maximum 8 hours credit.
Performance of works in a variety of jazz idioms and styles with emphasis on big band jazz.

MUSI 4781/6781. Jazz Band I. 1 hour.
Prerequisite: Permission of major.
Performance of works in a variety of jazz idiom and styles with emphasis on big band jazz. Topics and compositions will include a full historical range from the early blues charts of W. C. Handy (St. Louis Blues, et al.), through the music of Earl "Fatha" Hines and Bix Beiderbecke (1920's), to the big band jazz of the 1930's through 1960's (Benny Goodman and his colleagues through late Woody Herman and Count Basie).

MUSI 4784/6784. Jazz Improvisational I. 1 hour.
Prerequisite: Permission of major.
Introduction to jazz theory with in-depth study of chords/scale relationships based on modal harmony. Practicing the basic modes in etudes and utilizing those modes in improvisational exercises. Study of performance and compositional styles of Miles Davis (Miles Smiles) and Joe Henderson (Page One). Study of modal repertoire, including "Footprints," "Blue Bossa," and "So What."

MUSI 4785/6785. Jazz Band II. 1 hour.
Prerequisite: Permission of major.
Jazz and the Afro-Cuban influence; Eddie Harris and "free jazz".Study of jazz theory with in-depth analysis of Afro-Cuban influences, quartal harmony, and so-called free jazz styles. Study of compositional styles of Dizzy Gillespie (Dizzy's Diamonds), Eddie Harris (Mean Greens), John Coltrane (Meditations), and Ornette Coleman (Free Jazz). Study of repertoire, including "A Night in Tunisia," "Manteca," "Freedom Jazz Dance," and "Mean Greens."

MUSI 4786/6786. Jazz Improvisation II. 1 hour.
Prerequisite: MUSI 4784/6784.
Prerequisite or corequisite: Permission of major.
Introduction to the 12-bar blues form and introduction to "Rhythm Changes" and the language of Bebop. Study of performance and compositional styles of Louis Armstrong (Best of the Decca Years), Donald Byrd (Royal Flush), Miles Davis (Kind of Blue), and Hank Mobley (Soul Station). Study of repertoire, including "Freddie Freeloader," "All Blues," "Watermelon Man," and "Back O' Town Blues." Study of rhythmic relationships in performance and compositional styles of Lester Young (Lester Leaps In), Charlie Parker (Anthropology), Duke Ellington (Cottontail), Horace Silver (The Best of Blue Note), and Art Blakely and the Jazz Messengers (At the Café Bohemia).

MUSI 4788/6788. Jazz Private Applied. 1 hour.
Prerequisite: Permission of major.
Continuation of the 32-bar song form (begun with "I Got Rhythm"). Study of jazz theory with in-depth analysis of chord/scale relationships based around standard period compositions of Duke Ellington, Cole Porter, Harold Arlen, George Gershwin, Thelonious Monk, and others. Study of performance and compositional styles of Clark Terry (Memories of Duke), Joe Pass (Ira, George and Joe), Duke Ellington (In a Mellow Tone), and Thelonious Monk (Round Midnight). Study of repertoire, including "A Foggy Day," "I Love You," "I Let a Song go Out of My Heart," and "Well You Needn't."

MUSI 4790/6790. Chamber Music Ensemble. 1 hour. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Chamber music experiences in variable instrumental categories (percussion, clarinet, trombone, etc.)

MUSI 4792L/6792L. Jazz Improvisation. 1-2 hours. Repeatable for maximum 6 hours credit. 1-2 hours lab per week.
Prerequisite: MUSI 1120 and MUSI 1130.
Prerequisite or corequisite: Permission of department.

The study and performance of jazz improvisation styles from the 1930's to the present through listening, analysis, practical application (applied study), and performance.

MUSI 4800/6800. Contemporary Chamber Ensemble. 1 hour. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Performance of modern literature for small and large ensembles.

MUSI 4810. Applied Music Instruction. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: (MUSI 3820 and MUSI 3910) or permission of department.
Applied instruction for music majors in a musical instrument, voice, or composition for the first semester of the senior year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 4812. Applied Composition Instruction. 3 hours.
Prerequisite: MUSI 3822.
Applied instruction for music majors in composition for the first semester of the senior year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 4814. Applied Electronic Composition Instruction. 1-3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: MUSI 4130/6130 or MUSI 5730/7730 or permission of department.
Applied instruction in electronic music composition.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 4820. Applied Music Instruction. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: MUSI 4810 or permission of department.
Applied instruction for music majors in a musical instrument, voice, or composition for the second semester of the senior year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 4822. Applied Composition Instruction. 3 hours.
Prerequisite: MUSI 4810.
Corequisite: MUSI 5910.
Applied instruction for music majors in composition for the second semester of the senior year.
Non-traditional format: Weekly instruction in a major or secondary applied instrument, voice, or composition, both one-on-one and in seminar. Credit hours vary according to degree program and reflect differing performance expectations and literature difficulty.

MUSI 4830/6830. Collegium Musicum. 1 hour. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Performance of early music through the Baroque.

MUSI 4840/6840. Symphonic Wind Ensemble. 1 hour. Repeatable for maximum 8 hours credit.
Prerequisite: Permission of department.
Performance of wind chamber compositions with concentration on advanced scores.

MUSI 4850/6850. Opera Ensemble. 1 hour. Repeatable for maximum 4 hours credit.
Prerequisite: Permission of department.
Performance of operatic literature.
Non-traditional format: This is a performance group that requires additional rehearsal time to function. The additional time will account for what would ordinarily be homework in regular courses.

MUSI 4960H. Directed Readings and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and senior standing.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

MUSI 4970H. Directed Readings and/or Projects (Honors). 3 hours.
Prerequisite: MUSI 4960H and permission of Honors and senior standing.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

MUSI 4980H. Directed Readings and/or Projects (Honors). 3 hours.
Prerequisite: MUSI 4970H and permission of Honors and senior standing.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

MUSI 4990H. Honors Thesis. 3 hours.
Prerequisite: MUSI 4980H and permission of Honors.
Honors thesis based upon independent research in music or closely related field carried out under the direction of a faculty member.
Non-traditional format: Honors thesis.

MUSI 5106/7106. Jazz Combos. 1 hour. Repeatable for maximum 4 hours credit. 2 hours lab per week.
Prerequisite: Permission of department.
Performance of works in a variety of jazz idioms and styles with emphasis on small group jazz.

MUSI 5110/7110. Music for Childhood. 3 hours.
Prerequisite: MUSI 3110 and MUSI 3120.
Literature, techniques, and methodologies for teaching children music in a diverse society; a study of children's musical development.

MUSI 5120/7120. Teaching Music for Early Childhood Teachers. 3 hours.
Prerequisite: MUSI 3050.
Music teaching techniques, methods, and materials for the early childhood teacher. For education majors only.

MUSI 5130/7130. Early Childhood Musical Development. 3 hours.
Prerequisite: MUSI 3110 and MUSI 3120.
Musical development of children from birth through age eight years emphasizing auditory perception, auditory discrimination, responses of children to music, modes of learning music, and children's acquisition of musical performance skills, and understandings.

MUSI 5140/7140. Computer-Assisted Instruction in Music. 2 hours.
Prerequisite: MUSI 2120 and MUSI 2130.
Programming and testing CAI music lessons.

MUSI 5260/7260. Marching Band Techniques. 2 hours.
Methods and techniques for organizing and training marching bands; planning music, drills, formations, and shows.

MUSI 5270/7270. Advanced Conducting. 2 hours.
Prerequisite: MUSI 3490 or MUSI 3500 or MUSI 3510.
Choral and instrumental conducting methods and techniques with application in laboratory situations.

MUSI 5280/7280. Instrumental Techniques. 1 hour. Repeatable for maximum 4 hours credit.
Performance techniques and teaching methods for wind, string, and percussion instruments.

MUSI 5290/7290. Jazz Piano Improvisation Class. 2 hours.
Skills and techniques in keyboard jazz playing based upon a knowledge of modern popular harmonic and notational practices.

MUSI 5340/7340. Choral Literature and Performance Practice. 2 hours.
Corequisite: MUSI 3130.
Choral music, including multicultural materials, suitable for all levels and voices.

MUSI 5350/7350. Instrumental Literature and Performance Practice. 2 hours.
Corequisite: MUSI 3150.
Instrumental music, including multicultural materials, suitable for all levels of instruction for band, orchestra, and chamber music.

MUSI 5400/7400. Principles of Music Therapy. 3 hours.
Music as human behavior and its uses as therapeutic intervention with various populations.

MUSI 5410/7410. Psychology of Music. 3 hours.
Prerequisite: MUSI 5400/7400.
Acoustical and psychological aspects of music with emphasis upon problems of perception, experimental aesthetics, musical function, measurement and diagnosis of musical ability.

MUSI 5420/7420. Influence of Music on Behavior. 3 hours.
Prerequisite: MUSI 5410/7410.
Physiological effects of music, the relation of music to health, and the place of music in the habilitative and rehabilitative process.

MUSI 5430/7430. Clinical Experience. 2 hours.
Prerequisite: MUSI 5400/7400 or MUSI 5420/7420 or MUSI 5440/7440.
Practical application of music therapy in an assigned clinic, along with seminars to analyze effectiveness, in-depth interactions, intervention strategies, and accountability measures.

MUSI 5440/7440. Music in Recreation. 2 hours.
Prerequisite: MUSI 2120 or MUSI 2130 or MUSI 2530 or MUSI 3480.
Methods of song leading and accompanying on the autoharp, guitar, and piano.

MUSI 5450/7450. Music for Exceptional Children. 3 hours.
Prerequisite: Junior standing and permission of department.
Trends in special education, characteristics and needs of those classified as exceptional, curriculum development, and intervention strategies. Mainstreamed and self-contained settings will be discussed.

MUSI 5730/7730. Electronic Music Composition II. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: MUSI 4130/6130.
Electronic music compositional techniques, focusing on digital sound recording, sampling, and editing. Students will use highly advanced recording and editing software on a high-speed computer.

MUSI 5910. Senior Recital in Music. 1-2 hours.
Prerequisite: MUSI 3820 or MUSI 4810.
Corequisite: MUSI 4810 or MUSI 4820.
Required recital for music majors in a musical instrument, voice, or composition, normally taken during the first or second semester of the senior year.
Non-traditional format: Credit varies according to degree program, reflective of difficulty of literature and level of performance expectations.

(NMIX) New Media Institute

New Media Institute

NMIX 2020. Introduction to New Media. 3 hours.
Exploration of the economic, technical, social, and cultural aspects of media technologies. The course will take a historical perspective, covering three sections: Old New Media, Now New Media, and Next New Media.

NMIX 3110. New Media Production. 3 hours.
Prerequisite or corequisite: NMIX 2020.
Hands on instruction in the use of new media technologies. Upon completion of this course, students will have a working knowledge of how to use new media technology and how to create communication messages with new media technology.

NMIX 3220. New Media Topics I. 1 hour.
Prerequisite or corequisite: NMIX 2020 and NMIX 3110.
Presentations about a technique, topic, or technology of current interest in the form of a single speaker, a panel discussion, or a demonstration. Students will be expected to participate in discussions during and after sessions.

NMIX 3221. New Media Topics II. 1 hour.
Prerequisite: NMIX 3220.
Prerequisite or corequisite: NMIX 2020 and NMIX 3110.
Presentations about a technique, topic, or technology of current interest in the form of a single speaker, a panel discussion, or a demonstration. Students in this class will be expected to participate in discussions during and after sessions.

NMIX 4490. New Media Directed Study. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: NMIX 2020 and NMIX 3110.
Students will work on research or production projects under the direction of a New Media Institute Affiliate Faculty member. Students will be required to make a presentation of their final work.

NMIX 4510. New Media Capstone. 3 hours.
Prerequisite: NMIX 2020 and NMIX 3110.
Students will complete actual new media systems for real clients. Projects will be selected by New Media Institute Fellows and managed by the University of Georgia New Media Service Bureau. Most of these projects will be for University of Georgia units and organizations. Students will be grouped into three-person teams and will be assigned a project.

(PATH) Plant Pathology

College of Agricultural and Environmental Sciences, Department of Plant Pathology

PATH(ANTH)(BTNY) 3010. Fungi: Friends and Foes. 3 hours.
Impact of fungi on human affairs. Historical and current uses of fungi by humans as well as the roles of fungi in various ecosystems.

(PATH)CRSS(ENTO) 3500. Turfgrass Pest Management. 3 hours.
Prerequisite: CRSS 2830 or CRSS 3270-3270L.
Identification and control of turfgrass weeds, insects, and diseases. Emphasis will be placed on management strategies that include both chemical and non-chemical approaches to the prevention and control of common turfgrass pests.

PATH 3530-3530L. Introductory Plant Pathology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: (BTNY 1210 and BTNY 1210L and BTNY 1220 and BTNY 1220L) or (BIOL 1103 and BIOL 1103L and BIOL 1104 and BIOL 1104L) or (BIOL 1107-1107L and BIOL 1108-1108L).
Principles and concepts of plant pathology, including disease development, environmental interactions, microbial biology and life cycles, and disease control strategies. Broad concepts rather than diagnosis and control of specific diseases.

PATH 3830-3830L. Forest Pathology. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: (BTNY 1210 and BTNY 1210L and BTNY 1220 and BTNY 1220L) or (BIOL 1103 and BIOL 1103L and BIOL 1104 and BIOL 1104L) or (BIOL 1107-1107L and BIOL 1108-1108L)
Identification of forest diseases, assessment of their potential impacts, and management strategies.
Non-traditional format: This course is also offered through University System of Georgia Independent Study.

PATH 3910. Plant Pathology Internship. 3 hours.
Practical experience on the application of plant pathological principles and procedures learned outside of a formal classroom setting.
Non-traditional format: The student will spend the semester in either a university or industry setting obtaining hands-on experience in plant pathology.

PATH 3990. Special Problems in Plant Pathology. 1-3 hours. Repeatable for maximum 6 hours credit.
Research or intensive study in a special area of plant pathology, including forest pathology, mycology, nematology, virology, bacteriology, and host-pathogen interactions.
Non-traditional format: The student will spend the semester conducting a special problem under the direction of a faculty member.

PATH(BTNY) 4200/6200-4200L/6200L. Introductory Mycology. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: (BTNY 1210 and BTNY 1210L and BTNY 1220 and BTNY 1220L) or (BIOL 1103 and BIOL 1103L and BIOL 1104 and BIOL 1104L) or (BIOL 1107-1107L and BIOL 1108-1108L).
Morphology, biology, and taxonomy of fungi. Representatives of all major groups of fungi are considered.

(PATH) (ANTH) (BIOL) (BTNY) ECOL (ENTO) (FORS) (GEOG) (GEOL) 4261. Museum of Natural History Internship. 3 hours. Repeatable for maximum 6 hours credit. 7 hours lab per week.
Prerequisite: Permission of instructor and permission of Museum of Natural History.
Supervised work experience with a natural history collection. Students will learn techniques and other procedures for curating materials in a collection of their choice under the direction of collection personnel.
Non-traditional format: Students will maintain regular, weekly work schedules totaling 7 hours per week under the supervision of faculty and other collection personnel associated with the Museum of Natural History.

PATH 4280/6280-4280L/6280L. Diagnosis and Management of Plant Diseases. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: PATH 3530-3530L.
Development of fundamental and practical knowledge for identification and management of plant diseases.

PATH 4300/6300. Clinical Plant Pathology. 2 hours. Repeatable for maximum 6 hours credit. 4 hours lab per week.
Not open to students with credit in PATH 8160.
Prerequisite: Permission of department.
Prerequisite or corequisite: PATH 3530-3530L.
Supervised plant disease diagnosis experience within the Extension Plant Pathology Plant Disease Clinics. Students will learn techniques and procedures for diagnosing plant diseases on ornamentals, turf, fruit, vegetables, and field crops. Students will keep a written record of the diseases diagnosed.
Non-traditional format: Students will maintain regular, weekly work schedules for four hour blocks of time per week under the supervision of faculty associated with the Extension Plant Pathology Plant Disease Clinics.

(PATH)GENE 4700. Introductory Virology. 3 hours.
Not open to students with credit in MMIB 4500/6500-4500L/6500L.
Prerequisite: GENE(BIOL) 3200 or MIBO 3500 or permission of department.
Biology and genetics of vertebrate, invertebrate, and plant viruses, emphasizing their structure, replication strategies, gene expression, and pathogenesis.

(PATH) (CRSS) ENTO4740/6740-4740L/6740L. Integrated Pest Management. 3 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: ENTO 3740-3740L or PATH 3530-3530L or CRSS 4340/6340.
The utilization and integration of pest control tactics (cultural methods, biological control, pesticides, host resistance) for management of insects, pathogens, and weeds. The major methodologies for controlling pests are discussed individually and within the context of profitable production of selected commodities followed by discussion of multiple pest management using integrated control techniques.

(PEDB) Physical Education Basic

College of Education, Department of Physical Education and Sport Studies

PEDB 1010. Adapted Physical Education. 1 hour. 2 hours lab per week.
Development of skills and strategy in adapted physical education.

PEDB 1020. Beginning Badminton. 1 hour. 2 hours lab per week.
Development of skills and strategy in badminton.

PEDB 1040. Beginning Basketball. 1 hour. 2 hours lab per week.
Development of skills and strategy in basketball.

PEDB 1060. Beginning Canoeing. 1 hour. 2 hours lab per week.
Development of skills and strategy in canoeing.

PEDB 1080. Beginning Bowling. 1 hour. 2 hours lab per week.
Development of skills and strategy in bowling.

PEDB 1100. Beginning Backpacking-Hiking. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning backpacking-hiking.

PEDB 1110. Wilderness Backpacking. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate wilderness backpacking.

PEDB 1120. Beginning Golf. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning golf.

PEDB 1130. Intermediate Golf. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate golf.

PEDB 1140. Advanced Golf. 1 hour. 2 hours lab per week.
Development of skills and strategy in advanced golf.

PEDB 1150. Self Defense. 1 hour. 2 hours lab per week.
Development of skills and strategy in self defense.

PEDB 1160. Judo. 1 hour. 2 hours lab per week.
Development of skills and strategy in judo.

PEDB 1170. Beginning Karate. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning karate.

PEDB 1180. Intermediate Karate. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate karate.

PEDB 1200. Beginning Snow Skiing. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning snow skiing.

PEDB 1210. Intermediate Snow Skiing. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate snow skiing.

PEDB 1230. Beginning Racquetball. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning racquetball.

PEDB 1240. Intermediate Racquetball. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate racquetball.

PEDB 1260. Softball. 1 hour. 2 hours lab per week.
Development of skills and strategy in softball.

PEDB 1270. Soccer. 1 hour. 2 hours lab per week.
Development of skills and strategy in soccer.

PEDB 1300. Beginning Swimming. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning swimming.

PEDB 1310. Intermediate Swimming. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate swimming.

PEDB 1330. Scuba Diving. 1 hour. 2 hours lab per week.
Development of skills and strategy in scuba diving.

PEDB 1340. Advanced Scuba Diving. 1 hour. 2 hours lab per week.
Development of skills and strategy in advanced scuba diving.

PEDB 1350. Beginning Tennis. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning tennis.

PEDB 1360. Intermediate Tennis. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate tennis.

PEDB 1370. Advanced Tennis. 1 hour. 2 hours lab per week.
Development of skills and strategy in advanced tennis.

PEDB 1380. Beginning Volleyball. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning volleyball.

PEDB 1390. Intermediate Volleyball. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate volleyball.

PEDB 1400. Introduction to Weight Training. 1 hour. 2 hours lab per week.
Development of skills and strategy in an introduction to weight training.

PEDB 1410. Advanced Weight Training. 1 hour. 2 hours lab per week.
Development of skills and strategy in advanced weight training.

PEDB 1430. Wrestling. 1 hour. 2 hours lab per week.
Development of skills and strategy in wrestling.

PEDB 1450. Beginning Horseback Riding. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning horseback riding.

PEDB 1460. Intermediate Horseback Riding. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate horseback riding.

PEDB 1600. Ballet I. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning ballet.

PEDB 1610. Ballet II. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate ballet.

PEDB 1620. Ballet III. 1 hour. 3 hours lab per week.
Development of skills and strategy in advanced ballet.

PEDB 1630. Ballroom/Folk/Square Dance. 1 hour. 2 hours lab per week.
Development of skills and strategy in ballroom/folk/square dance.

PEDB 1640. Ballroom Dance I. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning ballroom dance.

PEDB 1650. Ballroom Dance II. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate ballroom dance.

PEDB 1660. Folk Dance. 1 hour. 2 hours lab per week.
Development of skills and strategy in folk dance.

PEDB 1680. Jazz Dance I. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning jazz dance.

PEDB 1690. Jazz Dance II. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate jazz dance.

PEDB 1710. Modern Dance I. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning modern dance.

PEDB 1720. Modern Dance II. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate modern dance.

PEDB 1730. Modern Dance III. 1 hour. 2 hours lab per week.
Development of skills and strategy in advanced modern dance.

PEDB 1740. Tap Dance I. 1 hour. 2 hours lab per week.
Development of skills and strategy in beginning tap dance.

PEDB 1750. Tap Dance II. 1 hour. 2 hours lab per week.
Development of skills and strategy in intermediate tap dance.

PEDB 1760. Performance Company. 1 hour. 2 hours lab per week.
Development of skills and strategy in a performance company.

PEDB 1770. Pre-Professional Performance Company. 1 hour. 2 hours lab per week.
Development of skills and strategy in a pre-professional performance company.

PEDB 1800. Basic Physical Education. 1 hour. 2 hours lab per week.
Development of skills and strategy in basic physical education.

PEDB 1810. Basic Physical Education. 1 hour. 2 hours lab per week.
Development of skills and strategy in basic physical education.

PEDB 1820. Basic Physical Education. 1 hour. 2 hours lab per week.
Development of skills and strategy in basic physical education.

PEDB 1830. Basic Physical Education. 1 hour. 2 hours lab per week.
Development of skills and strategy in basic physical education.

PEDB 1840. Basic Physical Education. 1 hour. 2 hours lab per week.
Development of skills and strategy in basic physical education.

PEDB 1850. Basic Physical Education. 1 hour. 2 hours lab per week.
Development of skills and strategy in basic physical education.

PEDB 1900. Fitness for Life Aerobic Dance. 1 hour. 3 hours lab per week.
Development of skills and strategy in fitness for life aerobic dance.

PEDB 1920. Fitness for Life Body Conditioning. 1 hour. 3 hours lab per week.
Development of skills and strategy in fitness for life body conditioning.

PEDB 1930. Fitness for Life Jogging. 1 hour. 3 hours lab per week.
Development of skills and strategy in fitness for life jogging.

PEDB 1940. Fitness for Life Swimming. 1 hour. 3 hours lab per week.
Development of skills and strategy in fitness for life swimming.

PEDB 1950. Fitness for Life Walking. 1 hour. 3 hours lab per week.
Development of skills and strategy in fitness for life walking.

PEDB 1990. Directed Study. 1 hour. 2 hours lab per week.
Development of skills and strategy in intercollegiate athletics.

(PEDS) Physical Education and Sport Studies

College of Education, Department of Physical Education and Sport Studies

PEDS 2420-2420L. Physical Education in Early Childhood Education. 2 hours. 2 hours lecture and 1 hour lab per week.
Developmentally appropriate movement skills and activities for use with children in early childhood. Field experiences in local elementary schools included.

PEDS 2920. Sports Officiating. 1 hour. Repeatable for maximum 3 hours credit. 1 hour lecture and 2 hours lab per week.
Competencies necessary for officiating sports, including knowledge of rules and officiating techniques.

PEDS 3100. Teaching Methods for Fitness. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: EXRS 3700.
Methods of teaching of health-related fitness. Concepts and directed laboratory experiences will enable the student to assess fitness programs and implement them in a physical education program.

PEDS 3110. Teaching Methods for Team Activities I. 2 hours. 1 hour lecture and 2 hours lab per week.
Teaching methods and strategies, including organization, management, and assessment of skills in soccer, basketball, and team handball.

PEDS 3120. Teaching Methods for Team Activities II. 2 hours. 1 hour lecture and 2 hours lab per week.
Teaching methods and strategies, including organization, management, and assessment of skills in softball, volleyball, and floor hockey.

PEDS 3210. Teaching Methods for Individual Activities I. 2 hours. 1 hour lecture and 2 hours lab per week.
Teaching methods and strategies, including organization, management, and assessment of skills in golf, track and field, and tumbling.

PEDS 3220. Teaching Methods for Individual Activities II. 2 hours. 1 hour lecture and 2 hours lab per week.
Teaching methods and strategies, including organization, management, and assessment of skills in bowling, badminton, and tennis.

PEDS 3301. Physical Education and Sport Studies Practicum I. 1 hour. 3 hours lab per week.
Individual practical experience within a physical education or sport setting.

PEDS 3302. Physical Education and Sport Studies Practicum II. 1 hour. 3 hours lab per week.
Individual practical experience within a physical education or sport setting.

PEDS 3303. Physical Education and Sport Studies Practicum III. 1 hour. 3 hours lab per week.
Individual practical experience within a coaching setting.

PEDS 3400. Sport and the Arts. 2 hours.
Relationship between sport and the arts. Description of how the arts have depicted sports performance throughout history and how sports influence the various art forms today.

PEDS 3415. Philosophy and Ethics in Sport. 3 hours.
Not open to students with credit in PEDS 3410 or PEDS 3470.
Examination of the values of sport and the bases for

ethical decision making in sport. Development of a philosophy of sport and the establishment of a personal code of ethics. Application of a code of ethics to ethical issues in sport such as drug testing, sportsmanship, and equity.

PEDS 3420. Managing the Legal Aspects of Sport. 3 hours.
Management of the legal principles and problems that directly affect sport.

PEDS 3430. Sports Business Practice. 3 hours.
Business opportunities in sport, including sporting goods manufacturing, retail sporting goods, sport facility and event management, sports marketing and promotions, and sports communication.

PEDS 3440. History of Sport. 3 hours.
The historical forces that have led to the modern development of sport. Investigation of the forces that led to the transition of sport from its premodern to its modern form.

PEDS 3450. Contemporary Issues in Sport. 3 hours.
Contemporary issues that are facing sport and the people who manage or participate in it.

PEDS 3460. Governance in Sport. 1 hour.
Structure, function, and influence that various governing bodies have on the conduct of sport at various levels.

PEDS 3480. Sport and the Black Culture. 3 hours.
A cultural analysis of sport and the Black culture. The way sport has evolved into a cultural expression in the Black community. Historical patterns and current conditions of Black's participation in sport through various articles, videos, and books.

PEDS 3500. Administrative Foundations of Coaching. 3 hours.
Role of the coach in dealing with the psychological and administrative issues in coaching.

PEDS 3720. Foundations of Physical Education. 3 hours.
Historical, philosophical, sociological, and psychological factors which influence the nature, evolution, and maintenance of physical education and sport in the schools.

PEDS 3750. Motor Skill Behavior. 3 hours.
Not open to students with credit in PEDS 4750.
Motor development and acquisition of motor skill behavior from birth to advanced age. Combines knowledge of motor development and motor learning in development of efficient teaching methods and strategies.

PEDS 3901. Coaching Principles and Strategies of Golf. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching golf.

PEDS 3902. Coaching Principles and Strategies of Gymnastics. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching gymnastics.

PEDS 3903. Coaching Principles and Strategies of Swimming. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching swimming.

PEDS 3904. Coaching Principles and Strategies of Tennis. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching tennis.

PEDS 3905. Coaching Principles and Strategies of Track. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching track.

PEDS 3911. Coaching Principles and Strategies of Baseball. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching baseball.

PEDS 3912. Coaching Principles and Strategies of Basketball. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching basketball.

PEDS 3913. Coaching Principles and Strategies of Football. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching football.

PEDS 3914. Coaching Principles and Strategies of Soccer. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching soccer.

PEDS 3915. Coaching Principles and Strategies of Softball. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching softball.

PEDS 3916. Coaching Principles and Strategies of Volleyball. 2 hours. 1 hour lecture and 3 hours lab per week.
Principles, strategies, and methods of coaching volleyball.

PEDS 4000. Directed Study in Physical Education and Sport Studies. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Directed study in physical education and sport studies.
Non-traditional format: Directed study.

PEDS 4300/6300-4300L/6300L. Physical Education for the Elementary School. 3 hours. 2 hours lecture and 2 hours lab per week.
Curriculum, methods, and evaluation strategies for teaching physical activities in kindergarten through 6th grade. Students will plan lessons and teach groups of students in elementary school physical education classes.

PEDS 4330/6330-4330L/6330L. Physical Education for the Middle/Secondary School. 3 hours. 2 hours lecture and 2 hours lab per week.
Curriculum, methods, and evaluation strategies for teaching physical activities in grades 7 through 12. Students will plan lessons and teach groups of students in both middle and high school physical education classes.

PEDS 4360. Curriculum Design/Administration in Physical Education. 3 hours.
Not open to students with credit in PEDS 3360.
Prerequisite: Permission of department.
Physical education curriculum development (prekindergarten through grade 12) and administration of instructional and extracurricular programs.

PEDS 4610/6610-4610L/6610L. Adapted Physical Education. 3 hours. 2 hours lecture and 3 hours lab per week.
The nature, behavioral characteristics, and motor limitations of various exceptional populations with methods of preparing meaningful individualized movement experiences in an integrated, segregated, or hospital/home bound setting. Includes planning lessons and teaching individuals in a clinic setting.

PEDS 4820. Social Aspects of Sport. 3 hours.
Influence of social forces and psychological factors affecting an individual's involvement in sport.

PEDS 5050/7050. Problems of Teaching in Physical Education. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Contemporary problems and issues facing the physical education teaching profession.
Non-traditional format: Normally a school district contacts a faculty member about being a consultant on some problem being encountered in a school. The faculty member elicits assistance from an individual student to study the problem and provide solutions.

PEDS 5140/7140. Current Problems in Physical Education and Sport Studies. 1-3 hours. Repeatable for maximum 3 hours credit.
Seminars on issues and problems in Physical Education and Sport Studies.
Non-traditional format: Class may be lecture, a course transmitted by satellite, or a series of speakers on a topic.

PEDS 5250/7250. Women and Sport. 3 hours.
Political, social, and cultural factors which have influenced the participation of women in sport and physical activity.

PEDS 5400. Professional Socialization in Physical Education. 1 hour.
Not open to students with credit in PEDS 4900.
Social and political dynamics of the teaching profession in physical education. Professional organizations, teacher education, staff development, and institutional organizations will be examined with the benefits and responsibilities of each.

PEDS 5460. Student Teaching in Physical Education. 1-12 hours. Repeatable for maximum 12 hours credit.
Full-time teaching experience in the public schools under an experienced cooperating teacher.
Non-traditional format: Student is assigned to a supervising teacher in a public school for fourteen weeks of a semester. The student prepares units, teaches lessons, and evaluates the learning of the students in the classes. The student is observed by the supervising teacher daily and a faculty member periodically to evaluate the student's performance as a teacher.

(PGEN) Plant Genetics

College of Agricultural and Environmental Sciences

PGEN 3580. Principles of Genetics. 3 hours.
Prerequisite: (BTNY 1210 and BTNY 1210L and BTNY 1220 and BTNY 1220L) or (BIOL 1103 and BIOL 1103L and BIOL 1104 and BIOL 1104L) or (BIOL 1107-1107L and BIOL 1108-1108L)
Principles of heredity and variation as related to all organisms. Emphasis on the application of genetic knowledge and on genetic experimentation.

(PHIL) Philosophy

College of Arts and Sciences, Department of Philosophy

PHIL 1000. Introduction to Philosophy. 3 hours. 2 hours lecture and 1 hour lab per week.
Not open to students with credit in PHIL 1000H.
A critical exploration of such topics as knowledge and belief, God and the problem of evil, freedom and determinism, the right and the good, language and meaning, mind and body, appearance and reality, and man and the world. Course may be taken through UGA Studies Abroad program in Cortona.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PHIL 1000H. Introduction to Philosophy (Honors). 3 hours.
Not open to students with credit in PHIL 1000.
Prerequisite: Permission of Honors.
A critical exploration of such topics as knowledge and belief, God and the problem of evil, freedom and determinism, the right and the good, language and meaning, mind and body, appearance and reality, and man and the world.

PHIL 1500. Logic and Critical Thinking. 3 hours. 2 hours lecture and 1 hour lab per week.
Not open to students with credit in PHIL 1500H.
The principles and standards for thinking and communicating clearly and effectively. Topics include theories of meaning, uses of language, common causes of confusion and error in thought and argument, and evaluation of arguments.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PHIL 1500H. Logic and Critical Thinking (Honors). 3 hours.
Not open to students with credit in PHIL 1500.
Prerequisite: Permission of Honors.
The principles and standards for thinking and communicating clearly and effectively. Topics include theories of meaning, uses of language, common causes of confusion and error in thought and argument, and evaluation of arguments.

PHIL 2200. Introduction to Ethics. 3 hours. 2 hours lecture and 1 hour lab per week.
Not open to students with credit in PHIL 2200H.
The major philosophical positions concerning right and wrong, ethical values, and moral responsibility. The relevance of moral philosophy to current issues of personal and social ethics.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PHIL 2200H. Introduction to Ethics (Honors). 3 hours.
Not open to students with credit in PHIL 2200.
Prerequisite: Permission of Honors.
The major philosophical positions concerning right and wrong, ethical values, and moral responsibility. The relevance of moral philosophy to current issues of personal and social ethics.

PHIL 2400. Philosophy, Science, and Nature. 3 hours. 2 hours lecture and 1 hour lab per week.
The philosophy of science and the philosophy of nature, including such issues as standards governing scientific reasoning and the philosophical implications of contemporary and past scientific theories.

PHIL 2400H. Philosophy, Science, and Nature. 3 hours.
Not open to students with credit in PHIL 2400.
Philosophical issues concerning science, including theories of knowledge underlying science, metaphysical and ethical implications of current scientific theories, and the historical evolution of some major scientific theories.

PHIL 2500. Symbolic Logic. 3 hours. 2 hours lecture and 1 hour lab per week.
Not open to students with credit in PHIL 2500H.
The methods and principles used to distinguish correct from incorrect deductive arguments, with emphasis on contemporary techniques of analysis.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PHIL 2500H. Symbolic Logic (Honors). 3 hours.
Not open to students with credit in PHIL 2500.
Prerequisite: Permission of Honors.
The methods and principles used to distinguish correct from incorrect deductive arguments, with emphasis on contemporary techniques of analysis.

PHIL 3000. Classics of Ancient Western Philosophy. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400.
Ancient Greek philosophy focusing particularly on works of Plato and Aristotle.

PHIL 3010. Classics of Modern Western Philosophy. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400.
Philosophers from the "modern period" of philosophy focusing on those writing in the seventeenth and eighteenth centuries, such as Descartes, Spinoza, Locke, Hume, and Kant.

PHIL 3020. Nineteenth-Century Western Philosophy. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400.
Works of major nineteenth-century philosophers such as Kant, Hegel, Fichte, Schopenhauer, Mill, Frege, and Nietzsche.

PHIL 3030. Existentialism. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400.
European existentialism, as initiated by Kierkegaard and developed in this century by such figures as Sartre, Camus, Marcel, Jaspers, and Buber.

PHIL 3200. Ethical Theory. 3 hours.
Prerequisite: PHIL 2200.
The nature and justification of fundamental ethical concepts and moral principles.

PHIL 3210. Feminist Philosophy. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400.
Philosophical investigation and evaluation of feminist philosophy, examining such approaches as liberal feminism, socialist feminism, radical feminism, ecofeminism, and other feminist approaches.

PHIL 3220. Biomedical Ethics. 3 hours.
Ethical and philosophical issues that arise in the context of medicine and bioresearch. Many ethical issues arise in health care contexts. This course will introduce students to some important problems in this area, and will help them to develop a decision framework for their resolution.

PHIL 3600. Metaphysics. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400.
Philosophical works that address problems such as: What is substance? What is causality? Is mind distinct from matter? Does God exist?

PHIL 3610. Theory of Knowledge. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400.
Basic problems and issues in the theory of knowledge, such as: What is truth? Can we acquire knowledge independently of experience? How can we justify our beliefs? Are inductive generalizations justified?

PHIL 4000/6000. Plato. 3 hours.
Prerequisite: PHIL 3000.
The major writings of Plato.

PHIL 4010/6010. Aristotle. 3 hours.
Prerequisite: PHIL 3000.
The major writings of Aristotle.

PHIL 4020/6020. Medieval Philosophy. 3 hours.
Prerequisite: PHIL 3000.
The major figures of the medieval period in western philosophy, including Augustine and Aquinas.

PHIL 4030/6030. Continental Rationalism. 3 hours.
Prerequisite: PHIL 3010.
Continental Rationalism, focusing on evaluating the principal writings of Descartes, Spinoza, and Leibniz.

PHIL 4040/6040. British Empiricism. 3 hours.
Prerequisite: PHIL 3010.
British Empiricism, focusing on evaluating the principal writings of Locke, Berkeley, and Hume.

PHIL 4050/6050. Kant. 3 hours.
Prerequisite: PHIL 3010 or PHIL 3020.
The major writings of Immanuel Kant.

PHIL 4060/6060. Hegel. 3 hours.
Prerequisite: PHIL 3010 or PHIL 3020.
The major writings of G.W.F. Hegel.

PHIL 4070/6070. Nineteenth-Century European Philosophy. 3 hours.
Prerequisite: PHIL 3010 or PHIL 3020.
Works of some major nineteenth-century philosophers, typically organized around a theme. Philosophers to be studied may include Mill, Bentham, Frege, Brentano, Schopenhauer, Fichte, Schelling, and Nietzsche.

PHIL 4080/6080. Classical American Philosophy. 3 hours.
Prerequisite: Permission of department.
The major writings of C.S. Pierce, William James, and John Dewey and their influence on the development of contemporary philosophy.

PHIL 4090/6090. Contemporary Continental Tradition. 3 hours.
Prerequisite: PHIL 3000 or PHIL 3010 or PHIL 3030.
Writings from the early phenomenologists, existentialists, contemporary Marxists and their successors, such as Husserl, Heidegger, Merleau-Ponty, Camus, Sartre, Marcuse, and Habermas.

PHIL 4100/6100. Contemporary Analytic Tradition. 3 hours.
Prerequisite: PHIL 3010 or PHIL 3600 or PHIL 3610.
The development of contemporary analytical philosophy from the turn of the century to the present. Readings will be from philosophers such as Russell, Moore, Wittgenstein, Carnap, Ryle, Austin, Quine, and Strawson.

PHIL 4210/6210. Social and Political Philosophy. 3 hours.
Prerequisite: PHIL 2200.
The nature and function of society and the state,

human freedom and rights, and the bases of social and political obligations.

PHIL(EETH) 4220/6220. Environmental Ethics. 3 hours.
Prerequisite: PHIL 2200 or any 3000-level PHIL course or permission of department.
Major professional and nonprofessional writings in the field of environmental ethics.

PHIL 4230/6230. Aesthetics. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400.
Philosophical theories about the arts; for example, painting, literature, and music. Questions to be addressed include: what makes art art? and what are appropriate criteria of good art? Attention may also be given to such topics as the function of art in society. Course may be taken through UGA Studies Abroad program in Cortona.

PHIL 4240/6240. Philosophy of Law. 3 hours.
Prerequisite: Permission of department.
The nature and function of law, with emphasis on the interpretation and application of the law in the judicial process. Readings in classical and contemporary schools of the philosophy of law.

PHIL(EETH) 4250/6250. Technology and Values. 3 hours.
Prerequisite: Any 3000-level PHIL course or permission of department.
Technology in its broadest human context, with emphasis on the mutual influence between means and ends and the impact of technology on shaping the beliefs and attitudes of a civilization. Includes alternative assessments of technology and illustrates with specific crucial issues of our time.

PHIL(LING) 4300/6300. Philosophy of Language. 3 hours.
Prerequisite: (PHIL 2500 and any 3000-level PHIL course) or permission of department.
Topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism, and the uses of language.

PHIL 4310/6310. Philosophy of Mind. 3 hours.
Prerequisite: PHIL 3000 or PHIL 3010 or PHIL 3020 or PHIL 3610.
The philosophical implications of alternative approaches to psychology such as the behavioral, the psychoanalytic, the phenomenological, with particular attention to such problematic areas as the nature and validation of psychological concepts, law, and theories, and the knowledge of other minds.

PHIL 4400/6400. History of Natural Science. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2400.
Major physical, biological, and cosmological theories and their philosophic import, sixth century B.C. to the present.

PHIL 4410/6410. Philosophy of Natural Science. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2400.
The logical structure of scientific hypotheses and/or laws, and the problems of their meaning and confirmation; the general patterns of scientific explanation; and the ideals of prediction and control.

PHIL 4420/6420. Philosophy of Social Science. 3 hours.
Prerequisite: PHIL 1000 or PHIL 2200 or PHIL 2400.
The methods and problems of inductive reasoning, including the nature of probable inference, techniques of verification, and the structure of scientific explanation, with special reference to the social sciences.

(PHIL)RELI 4500/6500. Philosophy of Religion. 3 hours.
Prerequisite: RELI 1003 or PHIL 1000 or PHIL 2200 or PHIL 2400.
The meaning, nature, and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and humanity's relation to God.

PHIL(LING) 4510/6510. Deductive Systems. 3 hours.
Prerequisite: PHIL 2500 or permission of department.
Symbolic-mathematical logic, examining the propositional and predicate calculi, with emphasis on problems in translation and formalization and topics in the philosophy of logic and mathematics.

PHIL(LING) 4520/6520. Model Theory. 3 hours.
Prerequisite: PHIL(LING) 4510/6510 or permission of department.
Formal semantics for sentential and first-order predicate logic, including both soundness and completeness results for first-order logic. Additional topics may include Goedel's incompleteness results, the Skolem-Lowenheim theorem, or possible world semantics for modal logics.

PHIL 4530/6530. Philosophy of Mathematics. 3 hours.
Prerequisite: (PHIL 1000 or PHIL 2400) and PHIL 2500.
The philosophical issues associated with mathematical inquiry, including, perhaps, the existence and nature of mathematical objects, the epistemology of mathematical truths, the character of mathematical proof, and the foundations of mathematics.

(PHIL)CSCI 4550/6550. Artificial Intelligence. 3 hours.
The artificial intelligence approach to modeling cognitive processes. Topics include an introduction to heuristic methods, problem representation and search methods, classic AI techniques, and a review of the controversial issues of the AI paradigm of cognition as computation.

(PHIL)HIST 4860/6860. History, History of Philosophy, Philosophy. 3 hours.
Historians and philosophers differ in the source of evidence and arguments they use and in the standards to which they appeal. Nonetheless, works in each of these fields raise questions relevant to the other field. The purpose of this course is to explore the main relationships between these two fields.

PHIL 4900. Problems in Philosophy. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Investigation of a philosophical problem or group of related problems with emphasis upon extensive reading in primary sources. Selection of topics will vary with instructor and interests of students.

PHIL 4950. Directed Readings in Philosophy. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Reading and independent research on a specified topic beyond normal course offerings and closely supervised by the tutor. Application should be made in advance of registration to the department head. Open only to students prepared to pursue advanced material.
Non-traditional format: Directed study.

PHIL 4960H. Directed Reading and/or Projects (Honors). 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

PHIL 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

PHIL 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

PHIL 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field or in a closely related field.
Non-traditional format: An independent research course. Each student meets individually with a faculty supervisor on a weekly basis to discuss the progress of his/her research project.

(PHYS) Physics

College of Arts and Sciences, Department of Physics

PHYS 1010. Physical Science. 3 hours.
Not open to students with credit in PHYS 1111-1111L or PHYS 1211-1211L.
An introduction to the concepts and laws of physics, and how their applications can be used to understand the behavior of familiar phenomena and objects. Concepts are emphasized more than formulas and numbers.

PHYS 1050. Physics of Music and Sound. 3 hours.
Prerequisite: MATH 1090 or MATH 1113.
Wave motion, particularly as applied to sound, will be studied. This knowledge of sound will then be applied to understanding the selected topics in music.

PHYS 1111-1111L. Introductory Physics-Mechanics, Waves, Thermodynamics. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: MATH 1090 or MATH 1113.
The first semester of a two-semester introductory course in physics. A knowledge of algebra and trigonometry is assumed. Mechanics (forces, Newton's laws of motion), wave phenomena, and thermodynamics.

PHYS 1112-1112L. Introductory Physics-Electricity and Magnetism, Optics, Modern Physics. 4 hours. 3 hours lecture and 2 hours lab per week.
Prerequisite: PHYS 1111-1111L or 1211-1211L.
The continuation of Introductory Physics-Mechanics, Waves, Thermodynamics. Electricity and electric circuits, magnetism, geometric and wave optics, and elementary atomic and nuclear physics.

PHYS 1211-1211L. Introductory Physics for Science and Engineering Students-Mechanics, Waves, Thermodynamics. 4 hours. 3 hours lecture and 3 hours lab per week.
Not open to students with credit in PHYS 1111-1111L.
Prerequisite or corequisite: MATH 2200 and MATH 2200L.

The first semester of a two-semester introductory course in physics for science majors. Students are assumed to have a basic grasp of differential calculus. Mechanics (forces, Newton's laws of motion), wave phenomena, and thermodynamics.

PHYS 1212-1212L. Introductory Physics for Science and Engineering Students-Electricity and Magnetism, Optics, Modern Physics. 4 hours. 3 hours lecture and 3 hours lab per week.
Not open to students with credit in PHYS 1112-1112L.
Prerequisite: PHYS 1111-1111L or PHYS 1211-1211L.
Prerequisite or corequisite: MATH 2210 and MATH 2210L.
The continuation of Introductory Physics for Science and Engineering Students-Mechanics, Waves, Thermodynamics. Electricity, electric fields, and electric circuits, magnetism and magnetic fields, geometric and wave optics, and elementary atomic and nuclear physics.

PHYS 1213. Selected Topics in Physics for Bioscience Students. 1 hour.
Prerequisite or corequisite: PHYS 1112-1112L or PHYS 1212-1212L.
Topics will include fluid statics and dynamics, sound, thermodynamics, special relativity, quantum and nuclear physics, including radioactivity.

PHYS 1990. Introductory Physics Seminar. 1 hour. Repeatable for maximum 2 hours credit.
Topics in physics and astronomy presented by faculty and visitors. Topics will vary from year to year, and several topics will be considered weekly.

(PHYS)HONS(BIOL)(CHEM)(GEOL) 2070H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in PHYS 1010 or CHEM 1110.
Prerequisite: (ENGL 1101 or MATH 1101) and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Occasional weekend field trips required.

(PHYS)HONS(BIOL)(CHEM)(GEOL) 2080H. Honors Science. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in BTNY 1220 or BTNY 1220L or GEOL 1121.
Prerequisite: HONS(BIOL)(CHEM) (GEOL) (PHYS) 2070H and permission of Honors.
Concepts of physics, chemistry, geology, and biology in an integrated fashion. The evolution of the universe from the primordial state to the present time, and considers human interaction with the environment.
Non-traditional format: Weekend field trips required.

PHYS 3320-3320L. Introductory Electronics. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: (PHYS 1112-1112L or PHYS 1212-1212L) and MATH 2500.
Electric circuits and electronics. DC and AC circuit analysis, diode and transistor circuits, integrated circuits, and digital electronics.

PHYS 3330-3330L. Modern Optics. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: (PHYS 1112-1112L or PHYS 1212-1212L) and MATH 2500.
The properties of light with emphasis on physical optics: diffraction, polarization, lasers, holography.

PHYS 3700. Modern Physics. 3 hours.
Prerequisite: (PHYS 1112-1112L or PHYS 1212-1212L).
Prerequisite or corequisite: MATH 2500.
An overview of "modern" physics developed in the last century. Topics include the special theory of relativity, the particle-wave duality, matter waves, photon theory, the Schroedinger Equation and basic applications, statistical mechanics. This course is a preparatory course for the upper-division physics curriculum, so it should be the first physics course taken by prospective majors after Introductory Physics for Science and Engineering Students-Electricity and Magnetism, Optics, Modern Physics.

PHYS 3900. Mathematical Methods in Physics. 3 hours.
Prerequisite: PHYS 1112-1112L or PHYS 1212-1212L.
Special topics in calculus for physics majors and engineers. Topics include vector calculus, linear algebra, power series, Taylor's series, complex analysis, and differential equations. The mathematical ideas and techniques are presented in the context of how and where they appear in the laws of physics, and the physical significance of the mathematics is discussed.

PHYS 3990. Directed Study. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: (PHYS 1112-1112L or PHYS 1212-1212L) and permission of department.
Intensive study, with one or more faculty members,

of topics not normally taught in other courses.
Non-traditional format: Outside reading and one-on-one discussion periods.

PHYS 4000/6000. Physics Seminar. 1 hour.
Repeatable for maximum 3 hours credit.
Discussion of contemporary topics in physics.

PHYS 4101/6101. Theoretical Mechanics I. 3 hours.
Prerequisite: MATH 2700.
Kinematics and dynamics of a particle and of systems of particles.

PHYS 4102/6102. Theoretical Mechanics II. 3 hours.
Prerequisite: PHYS 4101/6101.
Mechanics of continuous media. Formal developments in mechanics including the formulations of Lagrange and Hamilton.

PHYS 4201/6201. Electricity and Magnetism I. 3 hours.
Prerequisite: MATH 2700.
Experimental foundations, including development of Maxwell's equations.

PHYS 4202/6202. Electricity and Magnetism II. 3 hours.
Prerequisite: PHYS 4201/6201.
Applications of Maxwell's equations.

PHYS 4300/6300. Thermodynamics and Kinetic Theory. 3 hours.
Prerequisite: (PHYS 1112-1112L or PHYS 1212-1212L) and MATH 2700.
The laws of thermodynamics and their application to physical systems. Kinetic theory.

PHYS 4650L. Experimental Physics. 3 hours. 6 hours lab per week.
Prerequisite: PHYS 3320-3320L.
Laboratory course in which the student uses modern experimental techniques to investigate phenomena in atomic and molecular, nuclear, and condensed matter physics.

PHYS 4701/6701. Introductory Quantum Mechanics I. 3 hours.
Prerequisite: PHYS 3700 and PHYS 4101/6101.
Fundamental principles of quantum mechanics. Solutions of the Schroedinger equation and their properties for simple systems are discussed.

PHYS 4702/6702. Introductory Quantum Mechanics II. 3 hours.
Prerequisite: PHYS 4701/6701.
Perturbation theory and applications of quantum mechanics.

PHYS 4750/6750. Nuclear and Particle Physics. 3 hours.
Prerequisite: PHYS 3700.
Properties of nuclear and subnuclear systems. Fundamental interactions between particles are treated. An introduction to the theory of the structure of baryons, mesons, and nuclei is presented along with quarks and the standard model.

PHYS 4820/6820. Condensed Matter Physics. 3 hours.
Prerequisite: PHYS 3700 and PHYS 4300/6300.
Elastic, thermal, electrical, magnetic and optical properties of condensed matter. Covers such topics as crystal structure, symmetry operators, X-ray and neutron diffraction, lattice vibrations, thermal properties, electrons in metals and semiconductors, dielectric and optical properties, magnetism and magnetic resonance, superconductivity, and quantum fluids.

(PHYS)ENGR 4921. Engineering Physics Design Project. 3 hours.
Prerequisite or corequisite: PHYS 3330-3330L and PHYS 4201/6201 and (ENGR 2130 or PHYS 4101/6101) and (ENGR 3300 or ENGR 4240).
Engineering design experience including completion of a design project under the supervision of a project director.
Non-traditional format: Students will meet with a faculty review panel every two weeks. The faculty will evaluate progress and feasibility of the work.

PHYS 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Meetings with project director.

PHYS 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Meetings with project director.

PHYS 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the field of his/her major or in a closely related field.
Non-traditional format: Meetings with thesis advisor.

(POLS) Political Science

College of Arts and Sciences, Department of Political Science

POLS 1101. American Government. 3 hours.
Not open to students with credit in POLS 1105H.
Government and politics in the United States, including the philosophical and constitutional foundations, political institutions such as Congress and the presidency, political practices such as voting, and civil rights and liberties.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

POLS 1105H. American Government (Honors). 3 hours.
Not open to students with credit in POLS 1101.
Prerequisite: Permission of Honors.
Government and politics in the United States, including the philosophical and constitutional foundations, political institutions such as Congress and the presidency, political practices such as voting, and civil rights and liberties.

POLS 3000. Introduction to Political Theory. 3 hours.
Prerequisite: POLS 1101.
Political theory for students with little or no previous course work in the area. Focuses on one or more important political concepts or phenomena (e.g., power, freedom, or political ambition) and as entry-point into various approaches and literatures within the field.

POLS 3100H. Issues in Political Philosophy (Honors). 3 hours.
Prerequisite: POLS 1101 and permission of Honors.
Basic questions in political philosophy, e.g., purposes of government, forms of government, relationships of government and the individual, and the limits of political authority.

POLS 3200. Introduction to International Relations. 3 hours.
Not open to students with credit in POLS 3200H.
Prerequisite: POLS 1101.
Practices and problems of international politics in a global context, e.g., power, ideology, diplomacy, war, international organization and law, international economics, and the nature of independence in an interdependent world.

POLS 3200H. Introduction to International Relations (Honors). 3 hours.
Prerequisite: POLS 1101 and permission of Honors.
Practices and problems of international politics in global context, e.g., power, ideology, diplomacy, war, international organization and law, international economics, and the nature of independence in an interdependent world.

POLS 3300. Comparative Political Analysis. 3 hours.
Prerequisite: POLS 1101.
Comparative political themes in political science. The transition from feudalism to capitalism, state building, democracy, and the interaction between political institutions and cultures in various politics. Examples will be drawn from developed, communist/post-communist, and developing political systems.

POLS 3350H. Problems of Post-Communism (Honors). 3 hours.
Prerequisite: POLS 1101 and permission of Honors.
Selected problems and challenges of domestic and international politics in Russia and other selected post-communist states.

(POLS)SOCI(ANTH) 3450. Sociopolitical Ecology. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The relationship between humans and their environment; ecological and social theories about environmental policies and problems.

POLS 3600. Criminal Justice Administration. 3 hours.
Prerequisite: POLS 1101.
The actors and agencies in the administration of criminal law in the United States. Surveys processes critical to criminal punishment: arrest, bail, prosecution, conviction, sentencing, and corrections.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

POLS(SOCI) 3700. Research Methods in Criminal Justice. 3 hours.
Not open to students with credit in POLS 4150.
Prerequisite: POLS 1101.
Fundamental principles of social science research and related research design. Structured to develop students' abilities to think clearly, critically, and logically about social science issues through the scientific evaluation of empirical issues and evidence.

POLS 4010. Political Philosophy to Machiavelli. 3 hours.
Prerequisite: POLS 1101.
Selected works of such writers as Plato, Aristotle, Cicero, St. Augustine, and St. Thomas, concluding with the rejection of classical thought by Machiavelli.

POLS 4020. Political Philosophy: Hobbes to Nietzsche. 3 hours.
Prerequisite: POLS 1101.
The development of modern political philosophy through the analysis of selected works of such writers as Hobbes, Locke, Hume, Rousseau, Mill, Marx, and Nietzsche.

POLS 4030. Contemporary Political Thought. 3 hours.
Prerequisite: POLS 1101.
Major issues in contemporary political thought with attention to the theoretical roots of major contemporary ideologies.

POLS 4040. American Political Thought. 3 hours.
Prerequisite: POLS 1101.
The ideas about human nature and government that have shaped political practice and debate in America. The principles of the Declaration of Independence and the Constitution, as developed by Jefferson, Madison, and Hamilton, and the interpretation of these principles by such statesmen as Lincoln and Wilson. Other topics include black political thought and current liberal-conservative debates.

POLS 4050. African American Political Thought. 3 hours.
Prerequisite: POLS 1101.
African American political thought since the nineteenth century, ranging from early emigrationist sentiments to the nationalist exhortations of contemporary African American youth culture, including African American feminist and socialist thought.

POLS 4060. Problems in Democratic Theory. 3 hours.
Prerequisite: POLS 1101.
Major issues in theoretical discussions of democracy, such as the nature of democratic government, its purposes, its justification, its limitations, and the conditions necessary for its maintenance.

POLS 4070. Theories of Political Choice. 3 hours.
Prerequisite: POLS 1101.
Methods for individual choice in the face of political alternatives. The role of individual decision making in orienting political behavior and determining how and when political actors come into conflict or behave cooperatively.

POLS 4080. Legal Theory. 3 hours.
The course focuses on the form of reasoning that judges employ in deciding cases and aims to provide students with an understanding of some of the major issues and controversies faced by courts in interpreting and evaluating legal arguments.

POLS 4090. Social Justice. 3 hours.
An exploration of the theoretical basis for claims about social justice. In particular, what kinds of arguments ground persuasive claims about the moral acceptability of the rules and institutions that govern the distribution of social goods?

POLS 4150. Research Methods in Political Science. 3 hours.
Not open to students with credit in POLS(SOCI) 3700.
Prerequisite: POLS 1101.
The qualitative and quantitative techniques for measurement, analysis, and inference of political data. Recommended for majors, especially those planning to attend graduate school.

POLS 4190. Special Topics in Political Theory/Methods. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: POLS 1101.
Selected writers, themes, or methodologies in political theory.

(POLS)AFAM 4200. African American Social Change. 3 hours.
Prerequisite: POLS 1101 and AFAM 2000.
African American social movements, principally those in the United States, such as the convention and colonizing movements of the nineteenth century and the Civil Rights and Black Power movements of the twentieth century.

POLS 4210. International Law. 3 hours.
Prerequisite: POLS 1101.
Legal structures in the international system.

POLS 4220. International Conflict. 3 hours.
Prerequisite: POLS 1101.
The major approaches to the study of international conflict, with special emphasis on the logical and empirical foundations for key hypotheses regarding war and peace. These subjects are addressed by considering the incentives and constraints on decision making that arise from systemic, coalitional, national, and individual factors.

POLS 4230. Politics of International Economic Relations. 3 hours.
Prerequisite: POLS 1101.
The political foundations in international economic relations, including foreign investment, international monetary relations, trade issues, and economic sanctions.

POLS 4240. International Organization. 3 hours.
Prerequisite: POLS 1101.
The role of international institutions in overcoming obstacles to international cooperation, with emphasis on international regimes, formal as well

as informal, and their capacity to induce international cooperation.

POLS 4250. American Foreign Policy. 3 hours.
Prerequisite: POLS 1101.
The history and content of American foreign policy as well as the foreign policy-making process. The role of individuals and nongovernmental organizations in making foreign policy in a mature democracy.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

POLS 4300. United Nations Practicum. 3 hours. Repeatable for maximum 6 hours credit.
Issues coming before the United Nations organization in the upcoming session from the standpoint of assigned countries, culminating in participation in the national Model United Nations in New York in early spring. Research papers and practicum at United Nations headquarters in New York.

POLS 4360. Political Development. 3 hours.
Prerequisite: POLS 1101.
The sociopolitical dynamics of social change involving institutional development, industrialization, and modernization.

POLS 4370/6370. Politics of Industrialized Democracies. 3 hours.
Not open to students with credit in POLS 4370H.
Prerequisite: POLS 1101.
The political economy, institutions, and cultures of the major capitalist countries in Europe, East Asia, and North America. State-society relations and formal and informal political institutions, such as political parties, interest groups, electoral systems, and democratic representation.

POLS 4370H. Politics of Industrialized Democracies (Honors). 3 hours.
Not open to students with credit in POLS 4370/6370.
Prerequisite: POLS 1101 and permission of Honors.
The political economy, institutions, and cultures of the major capitalist countries in Europe, East Asia, and North America. State-society relations and formal and informal political institutions, such as political parties, interest groups, electoral systems, and democratic representation.

POLS 4380. Politics of Post-Communist Systems. 3 hours.
Prerequisite: POLS 1101.
Domestic and international politics in Russia and other selected post-communist states.

POLS 4390. Far Eastern Political Systems. 3 hours.
Prerequisite: POLS 1101.
The social, cultural, economic, and political processes in Asia Pacific systems, including Japan, China, and Korea.

POLS 4480. Special Topics in International Relations. 3 hours.
Prerequisite: POLS 1101.
Theoretical, analytical, and empirical approaches to international relations.

POLS 4490. Special Topics in Comparative Politics. 3 hours.
Prerequisite: POLS 1101.
Theoretical, analytical, and empirical approaches to comparative politics.

POLS 4490H. Special Topics in Comparative Politics (Honors). 3 hours.
Not open to students with credit in POLS 4490.
Prerequisite: POLS 1101 and permission of Honors.
Theoretical, analytical, and empirical approaches to comparative politics.

POLS 4510. Public Opinion and American Democracy. 3 hours.
Prerequisite: POLS 1101D.
Major methods and findings of survey research, with particular attention to attitudes and beliefs and their implications for the role of citizens in a representative democracy.

POLS 4520/6520. Electoral Behavior. 3 hours.
Prerequisite: POLS 1101.
Factors which contribute to electoral choice and the dynamics of voting in the American political system.

POLS 4530. American Political Parties. 3 hours.
Prerequisite: POLS 1101.
Political organizations that contest elections and seek to control government in the United States. Particular emphasis will be placed on the two major political parties, as well as the future of the American party system.

POLS 4540. Interest Group Politics. 3 hours.
Prerequisite: POLS 1101.
The role of organized groups in the United States political system. Special attention given to interest group formation and maintenance, legislative and executive branch lobbying, and the impact of interest groups on legislative behavior in light of theories of representation.

POLS 4550. Government and the Mass Media. 3 hours.
Prerequisite: POLS 1101.
The mass media and its relationship to campaigns and elections, the exercise of political leadership, the formation of public policy, and the development of democratic governance.

POLS 4560. African American Politics. 3 hours.
Prerequisite: POLS 1101.
African American political behavior, including the theoretical underpinnings of political action, the electoral preferences of African Americans, and the role of African Americans in United States political institutions.

POLS(AFAM) 4570. African American Social Change. 3 hours.
Prerequisite: POLS 1101 or AFAM 2000.
African American social movements, principally those in the United States, such as the convention and colonizing movements of the nineteenth century and the civil rights and black power movements of the twentieth century.

POLS 4600. The Legislative Process. 3 hours.
Prerequisite: POLS 1101.
The United States Congress with emphasis on leadership, procedures, and the role of parties and interest groups. Recent changes in Congress will be examined in light of theories of representation.

POLS 4610/6610. The United States Presidency. 3 hours.
Prerequisite: POLS 1101.
The president of the United States, including the president's constitutional position, theories of executive dominance and executive privilege, the president's attempt to control the executive branch, and presidential-congressional relations.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

POLS 4620. Public Administration and Democracy. 3 hours.
Prerequisite: POLS 1101.
Major issues of administration and public agencies, such as personnel, finance, administrative law, and the growth and significance of governmental bureaucracy.

POLS 4630. Government Budgeting and Finance. 3 hours.
Prerequisite: POLS 1101.
Public revenue and expenditure policies, financial administration, and politics of the budgetary process.

POLS 4640. Urban Politics. 3 hours.
Prerequisite: POLS 1101.
Local politics in the United States, including the development of cities, local government organization, participation of individuals and groups in urban politics, and policy making at the local level.

POLS 4650. State Politics. 3 hours.
Prerequisite: POLS 1101.
Politics in the American states. Similarities and differences in state constitutions, government structure, political participation, and public policies.

POLS 4660. Southern Politics. 3 hours.
Prerequisite: POLS 1101.
Politics of individual states, emergence of the Republican party, political mobilization, consequences of reapportionment, and selected civil rights topics.

POLS 4700. Constitutional Law: Powers. 3 hours.
Prerequisite: POLS 1101.
Supreme court cases on the separation of powers, national and state regulatory powers, the federal system, and the role of the courts.

POLS 4710. Constitutional Law: Rights and Liberties. 3 hours.
Prerequisite: POLS 1101.
Individual rights and liberties, with emphasis on the First Amendment, other parts of the Bill of Rights, and the Fourteenth Amendment.

POLS 4720. Criminal Procedure. 3 hours.
Prerequisite: POLS 1101.
The Fourth, Fifth, Sixth and Eighth Amendments to the United States Constitution, with specific attention to the law governing criminal arrest, trial, and punishment.

POLS 4730. Criminal Law. 3 hours.
Prerequisite: POLS 1101.
Substantive criminal law in the United States. State and federal statutes and selected cases, with particular focus on the definition and classification of crime, the elements of crime, types of crime, and justifications and excuses related to criminal liability.

POLS 4740. Judicial Process and Behavior. 3 hours.
Prerequisite: POLS 1101.
The relationship between law and society, types of law, and the operation of the judicial branch of government, particularly in the United States.

POLS 4780H. Special Topics in Law and Judicial Processes (Honors). 3 hours.
Prerequisite: POLS 1101 and permission of Honors.
Selected major issues related to law and/or judicial processes.

POLS 4790. Special Topics in American Politics. 3 hours.
Prerequisite: POLS 1101.
Theories and practices of political institutions, behavior, or policy making in the United States.

POLS 4790H. Special Topics in American Politics (Honors). 3 hours.
Not open to students with credit in POLS 4790.
Prerequisite: POLS 1101 and permission of Honors.
Theories and practices of political institutions, behavior, or policy making in the United States.

POLS 4900. Law Enforcement Administration. 3 hours.
Prerequisite: POLS 1101.
The history, development, and function of police agencies in American government and society, and a critical evaluation of administrative policies and practices in police organizations.

POLS 4960. Directed Readings and/or Projects. 3 hours.
Not open to students with credit in POLS 4960H.
Prerequisite: POLS 1101.
Individual study, reading, or projects under the supervision of a project director.
Non-traditional format: Student works independently and meets with project director several times during the semester to monitor progress and discuss requirements for written paper.

POLS 4960H. Directed Readings and/or Projects (Honors). 3 hours.
Not open to students with credit in POLS 4960.
Prerequisite: POLS 1101 and permission of Honors.
Individual study, reading, or projects, under the supervision of a project director.
Non-traditional format: Student works independently and meets with project director several times during the semester to monitor progress and discuss requirements for written paper.

POLS 4990H. Honors Thesis. 3 hours.
Prerequisite: POLS 1101 and permission of Honors.
Individual research in the major or a closely related field.
Non-traditional format: Thesis course.

POLS 5000. Political Science Internship. 3 hours.
Prerequisite: POLS 1101 and permission of department.
Covers the academic portion of internships. May include seminars, readings, and research to supplement experience gained by interns with their assigned organizations.
Non-traditional format: Student works independently and meets with project director several times during the semester to monitor progress and discuss requirements for written paper.

POLS 5010. Georgia Legislative Internship. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: POLS 1101 and permission of department.
Corequisite: POLS 5000.
Students are chosen on a competitive basis and work during the annual session of the Georgia General Assembly.
Non-traditional format: Student works under the supervision of legislators and legislative staff and meets with the faculty supervisor several times during the semester.

POLS 5020. Governor's Intern Program. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: POLS 1101 and one related upper-level course and selection for the Governor's Intern Program.
Corequisite: POLS 5000.
Students are chosen on a competitive basis by the Georgia Governor's Office and work with a government or nonprofit agency for thirteen weeks. Course cannot be counted as part of the major in Political Science.
Non-traditional format: Student works under the supervision of agency officials and meets with the faculty supervisor several times during the semester. Credit varies with the number of hours worked: 3 credits for 20 hours per week, 6 credits for 30 hours, and 9 credits for 40 hours.

POLS(SOCI) 5500. Criminal Justice Internship. 4 hours.
Prerequisite: POLS 1101.
An internship specifically designed for and required of students pursuing a degree in criminal justice. Centers on regular and systematic analysis of experimental learning under direct faculty supervision.
Non-traditional format: Student works independently and meets with project director several times during the semester to monitor progress and discuss requirements for written paper.

POLS(SOCI) 5510. Criminal Justice Internship. 4 hours.
Prerequisite: POLS 1101.
An internship specifically designed for and required of students pursuing a degree in criminal justice. Centers on the design, execution, and reporting of original research related to the specific placement or internship.
Non-traditional format: Internship.

POLS(SOCI) 5520. Criminal Justice Internship. 4 hours.
Prerequisite: POLS 1101.
An internship specifically designed for and required of students pursuing a degree in criminal justice. Criminal justice students are required to intern in an approved agency full time over the semester.
Non-traditional format: Internship.

(PORT) Portuguese

College of Arts and Sciences, Department of Romance Languages

Certain courses in Portuguese are not open to native speakers. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was Portuguese.

PORT 1001. Elementary Portuguese. 4 hours.
Not open to students with credit in PORT 1002.
Conversation, fundamentals of grammar, pronunciation, reading, and writing.

PORT 1002. Elementary Portuguese. 4 hours.
Prerequisite: PORT 1001.
A continuation of Elementary Portuguese. Teaches conversation, fundamentals of grammar, pronunciation, reading, and writing.

PORT 2001. Intermediate Portuguese. 3 hours.
Not open to students with credit in PORT 2002.
Prerequisite: PORT 1002 or permission of department.
Content-based review of Portuguese grammar and systematic vocabulary and skill development. Integration of language, culture, and literature. Given in Portuguese.

PORT 2002. Intermediate Portuguese. 3 hours.
Not open to students with credit in PORT 3010.
Prerequisite: PORT 2001 or permission of department.
A continuation of Intermediate Portuguese. Content based review of Portuguese grammar and systematic vocabulary and skill development. Integration of language, culture, and literature.

PORT 2600. Intensive Portuguese. 3 hours.
Prerequisite: Permission of department.
Emphasizes conversational skills, reading, writing, and listening comprehension. Not open to native speakers. Not to be used to satisfy the undergraduate language requirement.

PORT 2950. Study Abroad in Portuguese. 3 hours.
Prerequisite: Permission of department.
Portuguese language, literature, and culture courses taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

PORT 2960. Study Abroad in Portuguese. 3 hours.
Prerequisite: Permission of department.
Portuguese language, literature, and culture courses taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

PORT 2970. Study Abroad in Portuguese. 3 hours.
Prerequisite: Permission of department.
Portuguese language, literature, and culture courses taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

PORT 3010. Introduction to Language, Literature, and Culture of the Portuguese-Speaking World. 3 hours.
Prerequisite: PORT 2002 or permission of department.
Emphasis is divided between linguistic, literary and cultural skills to promote student's ability to read and analyze literary and non-literary texts, while concentrating on expressing themselves accurately in both oral and written Portuguese. Given in Portuguese.

PORT 4010/6010. Advanced Language, Literature, and Culture of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PORT 3010 or permission of department.
Linguistic, cultural, and literary structures in Portuguese-speaking societies. Emphasis is divided between students' abilities to express themselves fluently in oral and written Portuguese and to identify and contextualize main literary genres and movements. Given in Portuguese.

PORT 4040/6040. Topics in Cinema, Culture, and Literature in the Portuguese-Speaking World. 3 hours.
Specific aspects of cinema, culture, and literature of the Portuguese-speaking world. Topics to be selected according to the needs and interests of the students. Taught in seminar fashion with extensive outside readings of primary and secondary sources. Given in English.

PORT 4050/6050. Prose of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PORT 3010 or PORT 4010/6010 or permission of department.
Representative prose texts from Portugal, Brazil, and Lusophone Africa analyzed in their cultural, social, and political contexts. Given in Portuguese.

PORT 4060/6060. Poetry of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PORT 3010 or PORT 4010/6010 or permission of department.
Representative poetic texts from Portugal, Brazil, and Lusophone Africa analyzed in their cultural, social, and political contexts. Given in Portuguese.

PORT 4070/6070. Theater of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PORT 3010 or PORT 4010/6010 or permission of department.
Representative plays from Portugal and Brazil analyzed with emphasis on drama as a literary genre, specific aspects of staging and performance, and socio-political context of theatrical production. Given in Portuguese.

PORT 4080/6080. Studies in Culture and Literature of the Portuguese-Speaking World. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PORT 3010 or PORT 4010/6010 or permission of department.
Studies in culture and literature of the Portuguese-speaking world. Selected topics of special interest in their cultural, social, and political context.

PORT 4950. Directed Reading and/or Projects. 3 hours. Repeatable for maximum 15 hours credit.
Prerequisite: Permission of department and junior or senior standing.
Individual study, reading, or projects under the guidance of a faculty member.
Non-traditional format: Directed study.

PORT 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Junior or senior standing and permission of Honors.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

PORT 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Junior or senior standing and permission of Honors.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

PORT 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Junior or senior standing and permission of Honors.
Individual study, reading, or projects under the guidance of a project director.
Non-traditional format: Directed study.

PORT 4990H. Honors Thesis. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Honors students have the opportunity to undertake individual research in the field of their major or in a closely related field.
Non-traditional format: Directed study.

(POUL) Poultry Science

College of Agricultural and Environmental Sciences, Department of Poultry Science

POUL 1010. Birds in Our Lives. 3 hours.
A survey of the care, health and breeding management of parrots, pigeons, game birds, falcons, and other exotic birds.

POUL 2020-2020L. Introductory Poultry Science. 3 hours. 2 hours lecture and 2 hours lab per week.
The biology of the domestic fowl, basic nutrition, genetics, reproduction, embryology, processing, and management as they pertain to commercial poultry production.

POUL 2040. Poultry Evaluation. 1 hour. 2 hours lab per week.
Evaluation of live poultry for production and breeder stock potential and poultry product quality evaluation and selection standards.

POUL 2050. Poultry Judging. 1 hour. 2 hours lab per week.
Prerequisite: POUL 2040.
Judging of live poultry and poultry products.

POUL 3000-3000L. Laboratory Exercises in Biomedical Sciences. 3 hours. 1 hour lecture and 4 hours lab per week.
Prerequisite: BIOL 1107-1107L.
Prerequisite or corequisite: CHEM 2211 and CHEM 2211L.
Topics related to the biomedical sciences, including instrumentation, clinical chemistry, diagnostic microbiology, blood cell staining and counting, hemostasis, diagnostic immunology, anesthesia, and simple surgical procedures and techniques.

POUL 3600. Poultry Production. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: POUL 2020-2020L.
Application of the principles of poultry science to the practice of poultry production in terms of hatchery management, broiler production, breeder management, and the management of commercial laying hens.

POUL 3710. Commercial Poultry Management. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: POUL 3600 or permission of department.
Management practices and principles used in the business of producing eggs and poultry meat. Emphasis is placed on factors influencing costs and returns in poultry operations.

POUL 3720. Poultry Breeding. 3 hours.
Inheritance of morphological and physiological

characters with emphasis on the development of criteria for selection and development of genetically sound poultry breeding programs.

POUL 3750. Poultry Nutrition. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: POUL 2020-2020L or permission of department.
Biochemical aspects of the individual nutrients, their supply in terms of feedstuffs, and the formulation of practical poultry diets.

POUL 3790. Poultry Seminar. 1 hour. 1 hour lab per week.
Prerequisite: Permission of department.
Current problems and papers of scientific work in poultry will be presented by students.

POUL 3800-3800L. Avian Anatomy and Physiology. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: (BIOL 1103 and BIOL 1103L) or BIOL 1107-1107L or POUL 2020-2020L.
A survey of avian anatomy and physiology at the gross and cellular level. Special emphasis will be placed on the unique characteristics of avian physiology and morphology using the chicken as a model animal.

POUL 3910. Poultry Business Internship. 3 hours.
Prerequisite: Permission of department.
Poultry business firms provide the student with practical work experience in the daily operation and management of commercial poultry businesses.
Non-traditional format: Internship.

POUL 3990. Special Problems in Poultry Science. 2-5 hours. Repeatable for maximum 5 hours credit.
Prerequisite: Permission of department.
Research or intensive study in a specialized area of poultry science.
Non-traditional format: Independent study.

POUL 4010. Advanced Broiler Production. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: POUL 3600.
Current practices of broiler production encompassing nutrition, management, poultry health, and related areas.

POUL 4020. Advanced Table Egg Production. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: POUL 3600.
Current practices in the commercial egg industry encompassing production, management, economics, and integration of commercial laying hen and egg operations.

POUL 4030. Advanced Breeder Production/Hatchery Management. 2 hours. 1 hour lecture and 2 hours lab per week.
Prerequisite: POUL 3600.
Current practices in broiler breeder management and current practices in incubation technology and hatchery management.

POUL 4050/6050. Advanced Poultry Breeding. 3 hours.
Prerequisite: POUL 3720.
The development of practical poultry breeding programs. The mode of inheritance and relative heritability of various characteristics of economic importance and criteria for effective selection toward their improvement.

POUL 4060/6060-4060L/6060L. Physiology of Avian Reproduction. 3 hours. 2 hours lecture and 2 hours lab per week.
Prerequisite: BIOL 1108-1108L.
Lectures emphasize the reproductive physiology of poultry and integrate this information into management programs directed toward maximizing reproductive efficiency. Laboratories will emphasize the acquisition of skills and techniques in reproductive management, including the collection, preservation, and evaluation of semen, fertility evaluation, and proper incubation practices.

POUL 4330/6330. Basic Mycotoxicology. 3 hours.
Prerequisite: BIOL 1108-1108L and CHEM 2100 and CHEM 2100L.
Various mycotoxins which occur in feedstuffs as they relate to agricultural production. Fungal producers, chemical and physical properties of the toxins, prevalence and distribution in nature, biological effects and mode(s) of action, and means of control.

(POUL)ANNU(ADSC) 4370/6370. Monogastric Nutrition. 3 hours.
Prerequisite: [ADSC 3300-3300L or POUL 3750] and BCMB(BIOL)(CHEM) 3100.
Comparative nutrition of monogastric animals, with special but not exclusive, consideration of poultry and swine.

POUL(FDST) 4860L/6860L. Poultry Processing. 3 hours. 2 hours lecture and 3 hours lab per week.
Prerequisite: POUL 3600 or FDST 2010 or FDST 3000 or permission of department.
Basic principles and methods of processing poultry and eggs. Broiler harvesting, slaughter, evisceration, plant sanitation, microbiology, inspection, grading, regulations, water and waste water handling, quality control and HACCP plans, further processing, and shell egg handling and processing.

POUL 4990. Undergraduate Teaching Assistance Experience in Poultry Science. 2-3 hours.

Repeatable for maximum 6 hours credit.

Prerequisite: Permission of department.

Participating students will consolidate their knowledge in poultry science through teaching experience in a courseallied with the student's experience and education. The student is expected to meet regularly with a discussion or laboratory section and regularly with the professor in charge to discuss teaching objectives and subject matter.

Non-traditional format: Student will meet weekly with faculty supervisor to plan and coordinate the laboratory/discussion section which the student will later lead or assist in teaching each week. It is expected that each student will have a minimum of three hours of faculty contact and teaching experience per week for each credit hour earned.

(PSYC) Psychology

College of Arts and Sciences, Department of Psychology

PSYC 1030H. General Psychology (Honors). 3 hours.

Not open to students with credit in PSYC 1101.

Prerequisite: Permission of Honors.

A survey of psychology, with emphasis on theoretical and methodological issues.

PSYC 1101. Elementary Psychology. 3 hours.

Not open to students with credit in PSYC 1030H.

The phenomena, laws, theories, and history of psychology. Topics include animal and human learning, motivation, perception, individual differences, social behavior, and biopsychology. Emphasis is on fundamental principles rather than on application. Students are given the opportunity to participate in ongoing research.

Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PSYC 2100. Survey of Black Psychology. 3 hours.

Not open to students with credit in PSYC 4130 or AFAM 4250.

Black people as psychologists and as subjects of psychological inquiry. The history of Black psychology and African philosophy as a basis for Black psychology will be discussed. Other topics include self-concept and identity, intelligence and school achievement, the Black family, and Black speech and language.

PSYC 2101. The Psychology of Adjustment. 3 hours.

Psychological adjustment, including appropriate and inappropriate reactions to frustration and stress; solutions to conflict, fear, and anxiety; building self-concept and improving interpersonal relations.

Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PSYC(AFAM) 2150. Understanding Cultural Diversity. 3 hours.

Cross-cultural psychology, including an examination of issues such as conformity, leadership, and attributional style as they vary across different cultures, with consideration of their implications for the emerging world.

PSYC 2520. Comparative Animal Behavior. 3 hours.

Prerequisite: PSYC 1101.

Methods, principles, and findings of the study of animal behavior. The value of conservation of natural populations of animals and how their behavior and the behavior of coexisting species, including humans, affects conservation.

PSYC 2530. Mental Processes. 3 hours.

Prerequisite: PSYC 1101.

Mental processes such as perception, imagery, memory, attention, problem solving, decision making, and thinking.

PSYC 2540. Basic Learning and Motivation. 3 hours.

Prerequisite: PSYC 1101.

The study of learning, including acquisition, extinction, generalization/discrimination, reinforcement, punishment, and motivation.

PSYC 2560. Interpersonal Behavior. 3 hours.

Prerequisite: PSYC 1101.

The social behavior of adults from a psychological perspective, including aggression, interpersonal attraction, leadership, conformity, and persuasion.

PSYC 2570. Applications of Psychology. 3 hours.

Prerequisite: PSYC 1101.

The applications of psychology to humans, especially for understanding, measuring, changing, and improving behavior. An introduction to personality, abnormal behavior, clinical psychology, and human relations.

PSYC 2980. Research Design in Psychology. 3 hours.

Prerequisite: PSYC 1101 and (BIOL 1103 and BIOL 1103L or BIOL 1104 and BIOL 1104L or BIOL 1107-1107L or BIOL 1108-1108L) and (STAT 2000 or MATH 2200).

Design of research in psychology. Experimental and quasi-experimental design, as well as the general principles of the scientific method. Direct experience with the formulation of hypotheses, collection of data, and description of research findings is required.

PSYC 2990. Research Analysis in Psychology. 4 hours.
Prerequisite: PSYC 2980.
Basic concepts and quantitative methods used to describe, analyze, and draw logical conclusions from data collected in psychological research. Direct experience with data analysis and description of research findings is required.

(PSYC)EPSY(ARTI) 3020. Introduction to Cognitive Science. 3 hours.
Prerequisite: PSYC 1101 or PHIL 1000 or EPSY 2020.
Interdisciplinary study of mind and intelligent activity that forms cognitive sciences. Contributions of psychology, philosophy, linguistics, biology, anthropology, computer science, and education toward uncovering important aspects of the mind and intelligent activity are discussed.

(PSYC)HONS 3040H. Honors Research Methods. 1 hour.
Prerequisite: Permission of Honors.
Research methods in the Social and Behavioral Sciences to enhance directed study participation and Honors thesis/project preparation.
Non-traditional format: Weekly seminars focus on individual student research designs. May be held as daily seminars during May session.

PSYC 3100. Special Topics in Psychology. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: PSYC 1101 and permission of major.
Introduction to special topics in the field of psychology.

(PSYC)AFAM 3150. Introduction to Black Psychology. 3 hours.
Prerequisite: Permission of department.
Deconstruction of traditional thought, behavior, and development as well as reconstruction of the same on contemporary terms; testing of nuances and varieties of multicultural and indigenous models. The designs and projected future of the Black Psychology Movement.

PSYC 3230. Abnormal Psychology. 3 hours.
Not open to students with credit in PSYC 4240.
Prerequisite: PSYC 1101.
The varieties of abnormal behavior: their explanation, assessment, and treatment.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PSYC 3260. Human Sexuality. 3 hours.
Prerequisite: PSYC 1101.
Research in human sexual behavior. Emphasis is given to empirical findings and current personal and social implications. Topics include variations in sexual behavior, deviance, social patterns, assessment, and treatment.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PSYC 3300. Social and Personality Development. 3 hours.
Prerequisite: PSYC 1101.
Factors that influence children's social behavior as they are integrated into adult society. Included are basic theories and research on the development of sex roles, aggression, altruism, moral standards, dependency, independence, achievement, and peer relations.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PSYC 3510. Theories of Personality. 3 hours.
Prerequisite: PSYC 1101.
The major theories of personality with attention given to current research and methodological issues in the field.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

PSYC 3810. Psychology of Health. 3 hours.
Prerequisite: PSYC 1101.
Psychological influences on health, illness, and responses to those states, as well as psychological origins and outcomes of health policy and health interventions.

PSYC 3900H. Honors Seminar in Psychology. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: PSYC 1101 and permission of major and permission of Honors.
An introduction to special topics in psychology for honors students.

PSYC 4100. Cognitive Psychology. 4 hours.
Not open to students with credit in PSYC 2530.
Prerequisite or corequisite: PSYC 2990 or EPSY(ARTI)(PSYC) 3020 (prerequisite only).
Contemporary theories of human information processing. Major topics include attention, mental representations, categorization, short-term and long-term memory, psycholinguistics, reasoning, problem-solving, judgment, and decision making. Laboratory/research experience is included.

PSYC 4110. Learning. 4 hours.
Not open to students with credit in PSYC 2540.
Prerequisite or corequisite: PSYC 2990.
The phenomena and theories of animal and human

learning, including Pavlovian conditioning, operant conditioning, discrimination learning and verbal learning, and organization and processing in memory. Laboratory/research experience is included.

PSYC 4120. Sensation and Perception. 4 hours.
Prerequisite or corequisite: PSYC 2990.
How organisms sense and perceive the environment. Topics discussed: anatomy and physiology of the sensory systems, types of stimuli affecting sensory systems, and current knowledge and theories of our perceptual abilities. Laboratory/research experience is included.

PSYC 4130. Physiological and Comparative Psychology. 4 hours.
Not open to students with credit in PSYC 2520.
Prerequisite or corequisite: PSYC 2990.
The biological bases of human and nonhuman behavior, with emphasis on underlying physiological mechanisms, and on the development, evolution, and function of behavior. Laboratory/research experience is included.

PSYC 4200. Social Psychology. 4 hours.
Not open to students with credit in PSYC 2560.
Prerequisite or corequisite: PSYC 2990.
Research and theory on social behavior, including attitudes, social influence, group dynamics, and person perception. Laboratory/research experience is included.

PSYC 4210. Psychological Testing. 4 hours.
Prerequisite or corequisite: PSYC 2990.
The measurement of individual and group differences in abilities, interests, achievement, and traits. Laboratory/research experience is included.

PSYC 4220. Developmental Psychology. 4 hours.
Prerequisite or corequisite: PSYC 2990.
Research and theory on the psychological development of the maturing human, including social/emotional and cognitive development. Laboratory/research experience is included.

PSYC 4230. Psychology of the Workplace. 4 hours.
Prerequisite or corequisite: PSYC 2990.
Major topics in industrial-organizational psychology, with emphasis on organizational and personnel psychology applied to business, industry, and government. Laboratory/research experience is included.

PSYC 4240. Psychopathology. 4 hours.
Not open to students with credit in PSYC 3230.
Prerequisite or corequisite: PSYC 2990.
An introduction to the mechanisms and treatment of psychopathology. Emphasis is placed on the use of the scientific method for understanding abnormal behavior. Laboratory/ discussion experience included.

(PSYC)AFAM 4500/6500. Psychology of Prejudice. 3 hours.
Prerequisite: (PSYC 1101 or SOCI 1101) and senior standing.
Motivational, cognitive, social, and cultural factors that lead to discrimination in our society and various perspectives found in the research on discrimination.

(PSYC)AFAM 4550/6550. Classic Studies in Black Psychology. 3 hours.
Prerequisite: AFAM(PSYC) 3150 or permission of department.
Studies which have had major social or scientific impact on the lives of Black Americans and the way black people have been viewed within psychology. Approach is historical and interdisciplinary.

PSYC 4600/6600. Psychology of Women. 3 hours.
Prerequisite: PSYC 3230 or PSYC 4200 or PSYC 4220.
Women as the subject of psychological inquiry. Topics include personality theory, psychopathology, psychological aspects of reproductive health, psychological reaction to being victimized, and life crises.

PSYC 4650. Cognitive Development. 3 hours.
Prerequisite: PSYC 4220.
Theory and research in cognitive development from infancy to adolescence, with emphasis on symbolic thought, memory, intelligence, and individual differences.

PSYC 4700/6700. Psychology of Aging. 3 hours.
Research in gerontology, with emphasis on learning, personality, attitudes, perception, ability, and adjustment in the aged.

PSYC 4800. Special Problems. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: PSYC 2990 and permission of department.
A course for the advanced undergraduate who wishes to participate in supervised research.
Non-traditional format: Directed study.

PSYC 4850. Directed Readings in Psychology. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: PSYC 2990 and permission of department.
A course for the student who wishes to read comprehensively in a particular content area under the direction of a faculty member.
Non-traditional format: Directed study.

PSYC 4910. Advanced General Psychology. 3 hours.
Prerequisite: Permission of department.
Review, summary, and integration of psychology as a whole. Attention will be given both to content and to psychology as a profession.

PSYC 4920. History of Psychology. 3 hours.
Prerequisite: Permission of department.
The history of psychology and its antecedents, both classical and modern.

PSYC 4930/6930. Systems of Psychology. 3 hours.
Prerequisite: Permission of department.
Major theoretical systems in psychology, with special emphasis on developments of the last half-century, especially behaviorism and cognitivism.

PSYC 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: PSYC 1101 and senior standing and permission of Honors.
Supervised research, reading, or other projects.
Non-traditional format: Directed study.

PSYC 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: PSYC 1101 and senior standing and permission of Honors.
Supervised research, reading, or other projects.
Non-traditional format: Directed study.

PSYC 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: PSYC 1101 and senior standing and permission of Honors.
Supervised research, reading, or other projects.
Non-traditional format: Directed study.

PSYC 4990H. Honors Thesis. 3 hours.
Prerequisite: PSYC 1101 and senior standing and permission of Honors.
Individual research in his or her major or in a closely related field.
Non-traditional format: Students will meet with faculty members on a regular basis.

PSYC 5100. Seminar in Psychology. 3 hours.
Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Current topics and new developments in areas of psychology which are not covered in other courses.

(PSYC)GRNT 5266/7266. Death, Dying, and Bereavement. 3 hours.
Prerequisite: Permission of department.
Multi- and inter-disciplinary approaches are used to explore death, dying, and bereavement from a variety of biopsychosocial perspectives.

PSYC 5750/7750. Principles of Primate Phylogeny. 3 hours.
Prerequisite: Junior or senior standing.
Interrelationships among morphology, behavior, and systematics for students studying primate behavior.

PSYC 5760/7760. Comparative Physical and Psychological Development of the Primates. 3 hours.
Prerequisite: Junior or senior standing.
Influence of species and developmental environment on normal and abnormal behavioral development.

PSYC 5770/7770. Organization of Primate Social Groups. 3 hours.
Prerequisite: Junior or senior standing.
The interaction of ecology, phylogeny, individual behavior, and group organization from a comparative perspective.

PSYC 5850. Psychopharmacology - Drugs and Behavior. 3 hours.
Prerequisite: PSYC 4130 or BIOL 1108.
The effects of psychoactive drugs on consciousness and behavior. The mechanisms of drug action on neurotransmitter systems are emphasized. Topics include the relationship between behavior and endogenous neurochemical activity, therapeutic agents in psychopathology, and drugs of abuse.

(READ) Reading Education

College of Education, Department of Reading Education

(READ)ACAR 0097. Academic Assistance Reading. 3 hours.
College reading and vocabulary skills.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(READ)ACAR 0098. Developing Reading and Studying Fluency. 4 hours.
Critical reading and thinking skills, reading fluency, and vocabulary development.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(READ)ACAR 0099. Reading and Studying in College. 3 hours.
Study strategies needed to be successful in college using content from a variety of disciplines, includes reading rate and vocabulary development.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(READ)ACAR 0099L. Preparation for the Collegiate Placement Exam (CPE). 1 hour. 1 hour lab per week.
Computer instruction on reading rate and test preparation for Collegiate Placement Exam (CPE).
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(READ)RGTR 0198. Reading Improvement. 1 hour.
Preparation for the reading portion of the Regent's exam.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

READ 3420. Reading Instruction in the Elementary School. 3 hours.
Principles and methods for teaching reading in the elementary school.

READ 3430. Reading Assessment in the Elementary School. 3 hours.
Formal and informal methods for assessing children's reading ability and planning instruction.

READ 3520. Teaching Reading in the Middle School. 3 hours.
Principles and methods for teaching reading in the middle school.

READ 3530. Content Area Reading in the Middle School. 3 hours.
Fostering middle grade students' reading and studying in various subject areas; strategies for effective use of textual materials across the curriculum.

READ 4000. Special Problems in Reading Education. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Approved independent project pertaining to Reading Education.
Non-traditional format: Independent study.

READ 4010. The Teaching of Reading. 3 hours.
Methods, materials, and issues relevant to teaching reading from kindergarten through the twelfth grade.

READ 4020. Reading Instruction for Young Children. 3 hours.
Methods, materials, and issues for teaching young children to read.

READ 4030. Teaching Reading in the Secondary Schools. 3 hours.
The concepts and strategies for developing reading and study skills needed by students in secondary schools.

(REAL) Real Estate

Terry College of Business, Department of Insurance, Legal Studies, and Real Estate

REAL 4000. Real Estate. 3 hours.
Not open to students with credit in REAL 4000H.
Real estate law, markets, valuation, and finance. Designed for non-real estate majors as well as a basis for more advanced courses.

REAL 4000H. Real Estate (Honors). 3 hours.
Not open to students with credit in REAL 4000.
Prerequisite: Permission of Honors.
The fundamentals of real estate, including asset management, development, finance, law, and valuation. Special consideration is given to understanding the role of real estate within the economy and its importance to non-real estate firms. An interdisciplinary course designed for Honors students, as well as to provide a basis for more advanced courses.

REAL 4800. Internship in Real Estate. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: REAL 4000 and permission of department.
Practical and applied experience in real estate. Student must be sponsored by a business or government agency.
Non-traditional format: Internship.

REAL 5070. Real Estate Development. 3 hours.
Prerequisite: REAL 4000.
Development process with particular emphasis on analyzing the feasibility of design, location, and construction.

REAL 5080. Principles of Valuation. 3 hours.
Prerequisite: REAL 4000.
Valuation of real property rights. Provides an in-depth look at conventional valuation techniques in addition to modern valuation methods based on statistical inference and industry-based computer software. A broad understanding of the role of real estate valuation within the real estate field.

REAL 5090. Real Estate Asset Management. 3 hours.
Prerequisite: REAL 4000.
Asset management decisions of individuals and corporations engaged in the real estate decision making process. Topics in real estate asset management include site selection, acquisition (lease or purchase), development, financing, management, and disposition. This is an intensive case study course intended for real estate majors.

REAL(FINA) 5100. Real Estate Finance. 3 hours.
Prerequisite: REAL 4000 or any 4000-level FINA course.
The instruments, techniques, and institutions of

real estate finance; sources of funds; mortgage risk analysis: emphasis on typical policies and procedures used in financing of residential, industrial, and commercial properties.

(REAL)LEGL 5200. Real Estate Law. 3 hours.
Prerequisite: REAL 4000.
How law impacts real estate, its ownership, conveyance, and development. Real property ownership interests, restrictions on such interest, methods of transferring such interest, private and public land-use controls, and legal transactions involving real estate, such as gifts, sales, and leases.

(RELI) Religion

College of Arts and Sciences, Department of Religion

RELI 1001. Introduction to Judaism, Christianity, and Islam. 3 hours.
Judaism, Christianity, Islam, and background religions, such as those of Mesopotamia, Egypt, Greece, and Rome.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

RELI 1002. Introduction to the Religions of India, China, and Japan. 3 hours.
The religions of India, China, and Japan, such as Hinduism, Buddhism, Confucianism, Taoism, and Shinto.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

RELI 1003. Introduction to Religious Thought. 3 hours.
Religion including various theological perspectives and the philosophy of religion.

RELI 1006. Religions of the World. 3 hours.
Not open to students with credit in RELI 1001 or RELI 1002 or RELI 1003 or RELI 2001H, RELI 2002H, RELI 2003H.
Survey of the religions of the world, including religions originating in the Near East, India, China, Japan, Africa, and Native America.

RELI 2001H. Introduction to Judaism, Christianity, and Islam (Honors). 3 hours.
Not open to students with credit in RELI 1001.
Prerequisite: Permission of Honors.
Judaism, Christianity, Islam and background religions, such as those of Mesopotamia, Egypt, Greece, and Rome.

RELI 2002H. Introduction to the Religions of India, China, and Japan (Honors). 3 hours.
Not open to students with credit in RELI 1002.
Prerequisite: Permission of Honors.
The religions of India, China, and Japan, such as Hinduism, Buddhism, Confucianism, Taoism, and Shinto.

RELI 2003H. Introduction to Religious Thought (Honors). 3 hours.
Not open to students with credit in RELI 1003.
Prerequisite: Permission of Honors.
Religion including various theological perspectives and the philosophy of religion.

RELI 2004. Introduction to Religion in Native American Cultures. 3 hours.
Native religious traditions of selected cultures of North America, with special attention to cultures of the Southeast, Great Plains, and Southwest.

RELI 2004H. Introduction to Religion in Native American Cultures (Honors). 3 hours.
Not open to students with credit in RELI 2004.
Prerequisite: Permission of Honors.
Elements of religion in selected cultures of North America, with emphasis on issues of cross-cultural understanding.

RELI(AFAM) 2005. African American Religions: An Introduction. 3 hours.
Major and selected contemporary religious groups and movements among African Americans.

RELI 2012. Asian American Religions. 3 hours.
Not open to students with credit in RELI 2012H.
Religious issues faced by Asian Americans through two major themes: Asian American efforts to preserve Asian religious traditions and conversion to other religions. The course examines the variety of Asian religions, issues and history of Asian American immigration, and challenges confronting specific Asian American communities.

RELI 2012H. Asian American Religions (Honors). 3 hours.
Not open to students with credit in RELI 2012.
Prerequisite: Permission of Honors.
Religious issues faced by Asian Americans through two major themes: efforts to preserve Asian religious traditions and conversion to other religions. The course examines the variety of Asian Religions, issues and history of Asian immigration, and the challenges confronting specific Asian American communities.

RELI(AFAM) 3000. The Bible in the Third World. 3 hours.
Prerequisite: RELI 1001 or RELI 1002 or permission of department.
Interpretations of the Bible in Africa, Asia, Central and South America and the influence upon minority communities in the United States.

RELI 3030. Religion and the Media. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Religion in the mass media. Topics may include the coverage of religious issues or events by the news media and the presentation of religious themes or concepts in the entertainment media.

RELI(HIST) 3150. Religion in the United States. 3 hours.
Prerequisite: Junior standing or permission of department.
The significant developments in American religious history and thought from Puritanism to the present with attention to the social and cultural contexts in which various religious movements arose.

RELI 3300. Introduction to East Asian Religions. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The history, beliefs, and practices of major traditions of China and Japan, particularly Confucianism, Taoism, and Buddhism. Special attention will be paid to the evolution of diverse forms within each tradition, and to the interactions of the different traditions.

RELI 4001/6001. Old Testament/Hebrew Bible Literature. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The nature, content, and problems of the Old Testament/Hebrew Bible, with attention given to historical data, literary forms, and ancient Near Eastern cultural backgrounds.

RELI 4002/6002. Prophetic Literature of the Old Testament/Hebrew Bible. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The origin and development of the phenomenon of prophecy as it existed throughout the history of ancient Israel.

RELI 4003/6003. Ancient Israelite Religion. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Origins of the religion of ancient Israel, its emergence from and continuities with ancient West Semitic religion and culture. Historical and comparative methods, emphasizing current knowledge of Near Eastern history and religions contemporary with ancient Israel.

RELI 4040/6040. Apocalyptic Literature. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Apocalyptic literature from its origins in the sixth and fifth centuries BCE down to its flourishing in Hellenistic and Roman times. Texts to be studied include Isaiah 24-27, 40-66, Zechariah 9-14, Joel, Malachi, Daniel, I Enoch, IV Ezra, Baruch, Qumran material, Mark 13 and the Book of Revelation. Questions bearing on contemporary theological significance will also be discussed.

RELI 4070/6070. Judaism. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The interaction of Jewish history and Western civilization, with emphasis upon the development of Jewish religion in the biblical, rabbinic, and modern periods.

RELI 4071/6071. The Holocaust. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The background and legacy of the destruction of European Jewry from 1933 to 1945. Topics include: the historical context, Holocaust art, literature, and film, the reactions of rescuers and bystanders, and theological issues raised by the Holocaust.

RELI 4071H. The Holocaust (Honors). 3 hours.
Not open to students with credit in RELI 4071/6071.
Prerequisite: Permission of Honors.
The background and legacy of the destruction of European Jewry from 1933 to 1945. Topics include: the historical context; Holocaust art, literature, and film; the reactions of rescuers and bystanders; and theological issues raised by the Holocaust.

RELI 4072/6072. American Judaism. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
An examination of what it means, and has meant, to be a Jew in the United States, with emphasis upon the historical experience and religious expressions of American Jews.

RELI 4080/6080. New Testament Literature. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The nature, content, and problems of New Testament literature, with particular attention given to its canonization and textual transmission.

RELI 4081/6081. Jesus. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Although primarily a study of what Jesus taught, attention is given to the literary and environmental background of his teaching, the historical life of the teacher, and the contemporary validity of what he taught.

RELI 4082/6082. Life and Letters of Paul. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
An historical-exegetical study of the life and letters of Paul, the relation between Acts and the Pauline epistles, early non-Pauline Gentile Christianity, Pauline theology, and its lasting impression on Christianity.

RELI 4083/6083. The New Testament World. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The political, social and religious influences on the New Testament writings. Special attention is given to intertestamental Judaism and Hellenistic and Roman religion as background to New Testament Christianity.

RELI 4101/6101. History of Christian Theology (Ancient-Medieval). 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The development of Christian thought from the first through the fourteenth century as expressed in the writings and practices of the Christian community and its leading thinkers.

RELI 4102/6102. History of Christian Theology (Modern-Contemporary). 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The development of Christian thought from the fifteenth century to the present as expressed in the writings and practices of the Christian community and its leading thinkers.

RELI 4105/6105. Women in Christian History. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The relationship between women and Christianity, particularly concerning matters involving gender equality in church and society.

RELI 4107/6107. American Religious History. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Major and innovative religious organizations, ideas, movements, and personalities as they express themselves in particular religious settings as well as the manner in which they have influenced other aspects of American culture.

RELI(AFAM) 4201/6201. African American Religious History. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The religious traditions of African Americans from Colonial times to the present; major religious movements, personalities, and ideas and their relationship to various aspects of American culture.

RELI(AFAM) 4202/6202. Southern Religious History. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The origins, growth, and current practices of religion in the American South. The interaction between religion and other aspects of Southern culture, such as racial and gender concerns, education, Darwinian science, temperance, and politics.

RELI(AFAM) 4203/6203. The Bible in the Black Church. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Biblical interpretation in black America from 1865 to the present.

RELI 4300/6300. Islam and Its World. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Islam as a religious and sociocultural phenomenon. The fundamental principles of the Islamic faith, Qu'ran, the Sunna of Muhammad, Islamic sectarianism, Islamic law, theology, and mysticism, and themes in Islamic art. The course will also survey Islam in its various forms throughout the world.

RELI 4301/6301. Islamic Thought in the Caliphal Age. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Islamic scholarship from the eighth through the fourteenth centuries. Principal topics covered will include the Qur'an and Qur'anic exegesis, the Hadith tradition, Islamic law, theology, philosophy, and Sufi mysticism.

RELI 4302/6302. Islam and the Modern World. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Islamic modernism and revivalism as a response to Western cultural penetration since the eighteenth century. Subjects covered will include Sufi reformism, Wahhabism, the Salafiyya movement, Islamic "Fundamentalism," the Iranian Revolution, women's rights, and Western perceptions of Islam.

RELI 4303/6303. The Sufi Way. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Islamic mysticism, both as a set of metaphysical doctrines and as it is expressed in religious practices. Particular attention will be given to the doctrinal development of Sufism, its literature, major figures, and the process of consciousness transformation.

RELI 4304/6304. The Koran, Sacred Text of Islam. 3 hours.
Undergraduate prerequisite: Junior standing or permission of department.
Historical, thematic study of the Islamic sacred text, the Koran, including textual history, its compilation, and the stages that led to its printed form. There will also be an introduction to basic technical terms of the Koranic sciences, Koranic hermeneutics, and Arabic script and phonology.

RELI(CMLT) 4307/6307. Comparative Islamic Literature. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The major genres of Islamic literature and its principle concepts, covering Qur'anic, hadith, legal and political literature, philosophy, theology, historiography, hagiography, and poetry, emphasizing the Medieval period and mystical prose and poetry primarily in Arabic, Persian, and Turkish. The works will be in English translation. A writing intensive course.

RELI 4310/6310. Islam and Islamic Culture in Morocco. 3 hours.
Prerequisite: Junior standing or permission of department.
An examination of Islam and Islamic culture in Morocco. The course covers basic Islamic beliefs and practices and the most significant aspects of Islamic culture in Morocco, such as music, art, and architecture.
Non-traditional format: This is a Maymester summer abroad program and will thus entail, with the course work, extensive travel throughout Morocco and homestays with Moroccan families. The educational experience of this course will be of an ongoing "immersion" type.

RELI 4400/6400. The History of Religions. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The nature of early primitive religions and the main outlines of the chief living religions of the world. The method will be both historical and analytical.

RELI 4401/6401. The Buddhist Tradition. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Buddhism from its origin in the life and teachings of the Buddha through the period of philosophical ferment in India, and its thought and institutions in the East and the West up to the present.

RELI 4402/6402. Confucianism and Chinese Tradition. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Confucianism and its place in traditional Chinese religion, thought, and culture. Emphasis on the teachings of foundational thinkers such as Confucius, Mencius, and Hsun-tzu.

RELI 4403/6403. The Taoist Tradition. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Taoism and its place in traditional Chinese religion, thought, and culture. Emphasis on the classical texts, Lao-tzu and Chuang-tzu; the evolution of the later Taoist religion; and the many varieties of Taoist spirituality.

RELI 4404/6404. Japanese Religion. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Religion in Japan from earliest times to the present, with emphasis upon Shinto, the domestication of Buddhism, and the relationship of religion to the Japanese state and "national identity." Particular attention given to the development of Zen in Japan.

RELI(PHIL) 4500/6500. Philosophy of Religion. 3 hours.
Prerequisite: RELI 1003 or PHIL 1000 or PHIL 2200 or PHIL 2400.
The meaning, nature, and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and humanity's relation to God.

RELI 4510/6510. Indian Philosophy and Religion. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Traces the path of India's religious and philosophical thought from the Indus civilization to the present. Attention will be given to interpreting the orthodox Hindu systems as well as Buddhism and their related religious practices, ethics, castes, and sects.

RELI 4520/6520. Constructive Theology. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The aims, methods, and content of theology as related to the theistic religions of humanity.

RELI 4530/6530. Theology and Culture. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
The relation of theology to philosophy, science, technology, and the arts, with special attention to the theological attempts to deal with the impact of science and technology upon culture and civilization.

RELI(ANTH) 4640/6640. Anthropology of Religion. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Anthropological approaches to the world's major religions as they relate to complex societies.

RELI 4800. Reading and Research in Religion. 3 hours. Repeatable for maximum 9 hours credit. 9 hours lab per week.
Prerequisite: Permission of department.
Directed study in reading and research in religion.
Non-traditional format: Directed study.

RELI 4900. Topics and Problems. 3 hours. Repeatable for maximum 9 hours credit. 9 hours lab per week.
Prerequisite: Permission of department.
Topics and problems in religion with emphasis upon extensive reading in primary sources and individual and/or group research projects. Selection of topics will vary with instructor and interest of students.
Non-traditional format:. Directed study.

RELI 4910/6910. Topics in Asian Religions. 3 hours. Repeatable for maximum 9 hours credit. 9 hours lab per week.
Prerequisite: RELI 3300 or permission of department.
Selected topics in the study of one or more of the religions of Asia.

RELI 4960H. Directed Reading and/or Projects (Honors). 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

RELI 4970H. Directed Reading and/or Projects (Honors). 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual study, reading or projects under the direction of a project director.
Non-traditional format: Directed study.

RELI 4980H. Directed Reading and/or Projects (Honors). 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

RELI 4990H. Honors Thesis. 3 hours. 9 hours lab per week.
Prerequisite: Permission of Honors.
Individual research in the field of his/her major or in a closely related field.
Non-traditional format: Directed study.

(RLST) Recreation and Leisure Studies

College of Education, Department of Recreation and Leisure Studies

RLST 1030. Professional Opportunities in Recreation and Leisure Services. 1 hour.
Not open to students with credit in RLST 2030.
Professional opportunities in recreation, parks, and leisure services.

RLST 2030. Introduction to Recreation and Leisure Studies. 3 hours.
Prerequisite: Permission of major.
The history and development of the organized park and recreation movement, the theoretical underpinnings of recreation and leisure studies, and contemporary recreation and leisure services.

RLST 2800. Programming in Leisure Services. 3 hours.
Prerequisite: Permission of major.
A comprehensive approach to leisure programming. Emphasis on elements of program planning and organization, leadership, and supervision.

RLST 2800L. Laboratory in Recreation Leadership. 1 hour. 1 hour lab per week.
Prerequisite: Permission of major.
Corequisite: RLST 2800.
Techniques of leadership in recreation and leisure settings.

RLST(FORS) 3310. Outdoor Recreation and Environmental Awareness. 3 hours.
Prerequisite: Permission of major.
Environmental policies and land ethics of natural resource management agencies. Emphasis will be placed on understanding outdoor recreation behavior and issues arising from human-environment interactions, including carrying capacities and human-wildlife conflicts.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

RLST 3450. Practicum in Recreation and Leisure Services. 1-2 hours. Repeatable for maximum 3 hours credit.
Prerequisite or corequisite: RLST 2800 and RLST 2800L.
Volunteer work in a local leisure service agency.
Non-traditional format: Student performs forty-five hours of volunteer service work in an area leisure service agency.

RLST 3850. Recreation for Special Populations. 3 hours.
Prerequisite or corequisite: RLST 2030 or permission of department.

Recreation service delivery to special populations. Solutions to barriers to full leisure participation placed before the developmentally disabled and physically impaired.
Non-traditional format: This course is also offered through University System of Georgia Independent Study.

RLST 4000. Special Problems in Recreation and Leisure Studies. 1-6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Specialized study in recreation and leisure studies. May involve intensive library investigation, the collection and analysis of original data pertinent to a given problem, or course work on a new topic with other students.
Non-traditional format: Student does directed reading with faculty member or group of students meet with faculty member on special topics course.

RLST 4020. Introduction to Therapeutic Recreation. 3 hours.
Prerequisite or corequisite: RLST 2800 and RLST 2800L and RLST 3850.
Historical, philosophical, and professional foundations of therapeutic recreation. Topics include the continuum of service and settings, terminology used, interrelationships in allied health, participant characteristics, and professional issues.

RLST 4030. Therapeutic Recreation Facilitation Techniques. 3 hours.
Prerequisite or corequisite: RLST 4020.
Facilitation techniques employed in therapeutic recreation. Topics include leisure education, life management skills, and therapeutic activity skills.

RLST 4040. Therapeutic Recreation Processes. 3 hours.
Prerequisite: (RLST 2800 and RLST 2800L and RLST 3850) or permission of department.
Programming, leadership strategies, and professional issues.

RLST (ANTH) (FORS) 4270. Field Studies in Natural Resource Recreation and Tourism. 3 -6 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Field studies to explore natural and cultural resource management issues including recreation, forestry, wildlife, tourism, environmental education, habitat conservation, and cultural land practices.
Non-traditional format: Two different options are available: (1) 4-week study abroad in New Zealand, Maymester (6 credits). (2) 1-week field study in Great Smokies National Park, summer semester (3 credits).

RLST 4840. Environmental Interpretation for Recreation. 3 hours.
Prerequisite: Permission of major.
Methods, principles, and philosophies of environmental interpretation in natural systems, with specific reference to natural resource recreation contexts. The roles of environmental education and persuasive communication in promoting environmental attitudes and behaviors will be emphasized.

RLST 4870. Organization and Administration of Leisure Services. 3 hours.
Prerequisite: Permission of department.
Management principles, concepts, and practices applied to organizing and administering recreation and park services.

RLST 4890. Seminar in Recreation as a Profession. 1 hour.
Prerequisite or corequisite: RLST 2800.
Current aspects of the field of recreation as a profession. Trends and problems of concern to graduating recreation majors preparing for internships.

RLST 4900. Research and Evaluation in Leisure Services. 3 hours.
Prerequisite: RLST 2800 and RLST 2800L.
The nature and value of research in leisure services. Understanding and using research, including needs assessment and program evaluation, in management, planning, and administration of leisure facilities and programs.

RLST 5130/7130. Leisure Education. 3 hours.
Prerequisite: Permission of major.
Prerequisite or corequisite: RLST 2800 and RLST 2800L.
Principles of educating for leisure. Review of techniques for enhancing leisure awareness, leisure attitudes, decision-making skills, and resource utilization. Emphasis is on the recreation professional's facilitative role in assisting individuals and groups to achieve satisfying lifestyles.

RLST 5320/7320. Women and Leisure. 3 hours.
Feminist critique of leisure traditions, including women's representation in leisure theories and services. Examines leisure as a context for hegemonic relationships.

RLST 5340/7340. Advanced Administrative Practices in Leisure Services. 3 hours.
Prerequisite: RLST 4870 or permission of department.
Techniques in budgeting and finance, personnel management, facility management, and public relations, as well as organizational theory and legislative issues.

RLST(FORS) 5400/7400-5400L/7400L. Park Management. 3 hours. 2 hours lecture and 2 hours lab per week.
Management of public lands and open spaces, including management tools, type and nature of physical effects, visitor management principles, and site development. Use of maps, aerial photos, and compass in recreation area development.

RLST 5430/7430. Camping Administration. 3 hours.
Prerequisite or corequisite: RLST 4870.
Camps with particular emphasis on program planning, selection and training of staff, campsite selection and development, health and safety, accessibility, and program evaluation.

RLST 5700. Internship in Recreation and Leisure Services. 15 hours.
Prerequisite: Permission of major.
Field placement in leisure service agency for entire semester. Training in provision and management of leisure programs and/or resources with agency and faculty supervisor.
Non-traditional format: Full time (forty hours/week) supervised field work.

(RMIN) Risk Management and Insurance

Terry College of Business, Department of Insurance, Legal Studies, and Real Estate

RMIN 4000. Risk Management and Insurance. 3 hours.
Risk identification, risk evaluation, and risk treatment methods. Consideration is given to both business and personal risks, with an emphasis on insurance as a risk management tool. Designed for non-majors as well as a basis for more advanced courses.

RMIN 4000H. Risk Management and Insurance (Honors). 3 hours.
Not open to students with credit in RMIN 4000.
Risk identification, risk evaluation, and risk treatment methods for Honors students. Consideration is given to both business and personal risks, with an emphasis on insurance as a risk management tool. Designed for non-majors as well as a basis for more advanced courses.

RMIN 4800. Internship in Risk Management and Insurance. 1-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: RMIN 4000 and permission of department.
Practical and applied experience in risk management and insurance. Student must be sponsored by a business or government agency.
Non-traditional format: Internship.

RMIN 5100. Commercial Property and Liability Insurance. 3 hours.
Prerequisite: RMIN 4000.
Property and liability risks and the effective management of these risks with insurance. Application of property insurance to pure risk exposures including direct and indirect property. Application of liability insurance to general business liability and catastrophic liability risks. Current topics in the field of commercial property and liability insurance. Group case study.

RMIN 5110. Employee Benefits. 3 hours.
Prerequisite: RMIN 4000.
Approaches to problems of employee security from the perspective of businesses. Topics include pensions, profit-sharing plans, 401(k) plans, group life and health plans, and flexible benefit programs.

RMIN 5510. Life Insurance. 3 hours.
Prerequisite: RMIN 4000.
Individual life, health, and annuity contracts within a financial planning context.

RMIN 5530/7530. Advanced Property Insurance. 3 hours.
Prerequisite: RMIN 5100 or permission of department.
Property risks facing businesses and the effective management of these risks with insurance. Practical application of property insurance to pure risk exposures, including direct and indirect property, inland marine, crime, boiler and machinery, and catastrophic property risks.

RMIN 5540/7540. Advanced Liability Insurance. 3 hours.
Prerequisite: RMIN 5100 or permission of department.
Liability risks facing businesses and the effective management of these risks with insurance. Practical application of liability insurance to pure risk exposures, including motor vehicle liability, professional and general liability, environmental liability, employment practices and workers' compensation, and fiduciary liability.

RMIN 5570. Insurer Operations and Policy. 3 hours.
Prerequisite: RMIN 4000.
Analysis of insurer operations and the issues facing managers of such operations. Topics covered include regulation, accounting, finance, marketing, underwriting, reinsurance, ratemaking, and claims.

RMIN 5950. Corporate Risk Management. 3 hours.
Prerequisite: RMIN 5100.
The operational and financial risks faced by firms and the study of various methods of handling these risks, including loss prevention, risk retention, self-insurance, corporate insurance programs, and capital markets.

(ROML) Romance Languages

College of Arts and Sciences, Department of Romance Languages

ROML 2550. Latino Literature, Language, and Culture. 3 hours.
Not open to students with credit in SPAN 2550. Critical analysis of the literary, socio-linguistic, and cultural presence of representative Hispanic groups in the United States. Designed for non-speakers of Spanish. Given in English.

ROML 3000. Topics in Romance Languages. 3 hours.
Selected topics in the Romance Languages. Taught in English. No credit allowed to majors and minors in the Romance Languages.

(ROML)AFAM 4860/6860. Topics in Afro-Hispanic Identity. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Representations of Africa and African American culture in Hispanic Literature by writers of African descent. By covering a variety of genres, the course will provide discussion about a cultural identity that is constantly in dialogue with dominant discourses. The course will incorporate critical texts.

(RUSS) Russian

College of Arts and Sciences, Department of Germanic and Slavic Languages

RUSS 1001. Elementary Russian I. 4 hours.
Fundamentals of Russian grammar, conversation, pronunciation, and reading, with an emphasis on oral proficiency and comprehension.

RUSS 1002. Elementary Russian II. 4 hours.
Prerequisite: RUSS 1001.
A continuation of Elementary Russian I.

RUSS 2001. Intermediate Russian I. 3 hours.
Prerequisite: RUSS 1002.
Review of basic grammar and study of more advanced grammatical topics. Oral proficiency, comprehension, and vocabulary building are emphasized. Includes reading and discussion of various Russian texts.

RUSS 2002. Intermediate Russian II. 3 hours.
Prerequisite: RUSS 2001.
A continuation of Intermediate Russian I.

RUSS 2050. Modern Russian Culture. 3 hours.
Russian culture in the twentieth century. Examines both high culture (literature, art, architecture, classical music) and low or popular culture (film, popular music, various aspects of daily life) within the framework of the historical and political development of the period. No knowledge of Russian required.

RUSS 3000. Business Russian. 3 hours.
Prerequisite: RUSS 2002.
Further development of communicative competence and cultural knowledge with a focus on practical application in business contexts. Study of various aspects of Russian business, including business correspondence and other types of documents.

RUSS 3001. Russian Conversation and Composition I. 3 hours.
Prerequisite: RUSS 2002.
Development of students' abilities to express themselves accurately in spoken and written Russian and to comprehend normal Russian speech.

RUSS 3002. Russian Conversation and Composition II. 3 hours.
Prerequisite: RUSS 3001.
A continuation of Russian Conversation and Composition I.

RUSS 3200. Russian Culture. 3 hours.
Prerequisite: RUSS 2002.
Russian culture from the period of Kievan Rus' to the 1917 Revolution. Designed to increase the student's proficiency in all language skills and to build vocabulary. Conducted in Russian.

RUSS 3990. Directed Study in Russian. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
Independent study and research under the direction of individual faculty members.
Non-traditional format: Directed study.

RUSS 4001. Advanced Russian Conversation and Composition. 3 hours.
Prerequisite: RUSS 3002.
Advanced language study, combining instruction in grammar, composition, and stylistics with practice in spoken Russian.

RUSS 4050. Nineteenth-Century Russian Prose in English Translation. 3 hours.
Representative works of nineteenth-century Russian literature. The class is conducted in English and all readings are in English translation.

RUSS 4060. Twentieth-Century Russian Prose in English Translation. 3 hours.
Representative works, including authors from the Silver Age, Soviet, and post-Soviet periods. The class is conducted in English and all readings are in translation.

RUSS 4250. Pushkin. 3 hours.
Prerequisite: RUSS 3001 or RUSS 3200.
Alexander Pushkin's major works in poetry and prose, and his role in the development of the Russian literary language. Conducted in Russian.

RUSS 4260. Introduction to Nineteenth-Century Russian Literature. 3 hours.
Prerequisite: RUSS 3001 or RUSS 3200.
Representative works in the original language. Conducted in Russian.

RUSS 4270. Introduction to Twentieth-Century Russian Literature. 3 hours.
Prerequisite: RUSS 3001 or RUSS 3200.
Representative works in the original language. Conducted in Russian.

RUSS 4510. Special Topics. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: RUSS 3001 or RUSS 3200 or permission of department.
Seminar focusing on specific topics in Russian literature and culture or Russian and Slavic linguistics.

RUSS 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: RUSS 3001 and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

RUSS 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: RUSS 3001 and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

RUSS 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Thesis for Honors students.
Non-traditional format: Thesis course.

(SEMI) Semitic

College of Arts and Sciences, Department of Religion

SEMI 4001/6001. Elementary Aramaic/Syriac. 3 hours.
Prerequisite: HEBR 2004 or permission of department.
Aramaic and/or Syriac grammar, especially as related to Hebrew, along with simple readings from religious texts.

(SOCI) Sociology

College of Arts and Sciences, Department of Sociology

SOCI 1101. Introductory Sociology. 3 hours.
Basic concepts, theoretical approaches, and methods of sociology, with an emphasis on culture, socialization, social organizations, and major institutions.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SOCI 1101H. Introductory Sociology (Honors). 3 hours.
Not open to students with credit in SOCI 1101.
Prerequisite: Permission of Honors.
Basic concepts, theoretical approaches, and methods of sociology, with an emphasis on culture, socialization, social organization, and major institutions.

SOCI 1600. Social Problems. 3 hours.
The causes, consequences, and social construction of American social problems, including poverty, crime and delinquency, environmental degradation, and race and ethnic relations.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SOCI(AFAM) 2020. African American Society. 3 hours.
The class, status, and power relations of African Americans as part of both the United States social structure and the African diaspora.

SOCI 2090. Social Change. 3 hours.
The causes, nature, and consequences of changes in social structure and institutions.

(SOCI)AFST(ANTH)(CMLT)(GEOG)(HIST) 2100. Introduction to Africa. 3 hours.
The history, physical environment (landforms, vegetation, and climate), and sociocultural environment (artistic, political, and social development) of Africa.

SOCI 2420. Class, Status, and Power. 3 hours.
Modern social status systems, with a focus on the United States. The use of prestige, occupational skills, and economic assets to create classes; the impact of class on life chances; and the interaction of class with race, gender, and belief systems to shape individual earnings, wealth, and power.

SOCI 2470. Deviance and Social Control. 3 hours.
The nature, extent, and correlates of deviance and its control by social institutions and agencies;

theories of deviance and societal reactions to deviance.

SOCI 2500. Culture and Social Institutions. 3 hours.
Social institutions that are the foundation of social and cultural continuity from one generation to the next, including family and kinship, education, religion, work, and politics.

SOCI 2730. Social Interaction. 3 hours.
The relationship between individuals and groups, as it shapes the development of social competence, personality, self-concept, motivation, attitudes and cognition.

SOCI(AFAM) 2820. Race and Ethnicity in America. 3 hours.
The causes and consequences of race and ethnic discrimination in America, with a focus on ethnic competition and conflict.

SOCI 2850. Sociology of Poverty. 3 hours.
The origins and social construction of poverty; theories of the origin and perpetuation of poverty.

SOCI 3000. Sociology in Film. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Popular Hollywood films as they illustrate culture, social class, race, gender, identity, and other sociological concepts. The ideological and utopian aspects of film are emphasized.

SOCI 3010. Sociology of Culture. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Recent trends in American culture, focusing on traditions, practices, and products, including books, music, and film. Organizing themes are culture as both a source of social integration and an arena of strife, and the reciprocal effects of culture and human agency.

SOCI 3060. Sociology of Education. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Mainstream and critical theories of how society shapes the purposes, processes, and organization of schools; current policy issues and sources of national education data, with primary focus on United States elementary and secondary schools.

SOCI 3070. Juvenile Delinquency. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The juvenile justice system, including the measurement of delinquency, contexts of adolescent socialization, and techniques of evaluation research.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SOCI 3100. Sociology of Medicine. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Social factors in health and illness, with an emphasis on United States society. Topics include the socialization of health professionals; the organization and finance of health care systems; and ethical and political issues related to health.

SOCI 3140. Social Control of Crime. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The nature of responses to crime by victims, criminal justice agencies, and other institutions; theories explaining reactions to crime.

SOCI 3150. Criminal Punishment and Society. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The relationship between society and the nature and extent of American punishment over time; theories of and justifications for punishment.

SOCI 3220. Development of Sociological Theory. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Pivotal sociological theorists from classic theorists such as Marx, Weber, and Durkheim to the present.

SOCI 3230. Sociological Theory: The German Tradition. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The German theoretical tradition, beginning with Marx and continuing with Wilhelmine-era sociologists, particularly Simmel and Weber; the Weimer and Nazi periods; and postwar critical theorists, notably Habermas.

SOCI 3250. Social Movements and Collective Behavior. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The origin, nature, and processes of crowd behavior and social change movements.

SOCI 3270. Personality and Social Structure. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The social factors that shape behavior and self-concept; theories such as behaviorism, symbolic interactionism, Freudian psychology, cognitive social psychology, and critical approaches. Topics include emotions, human development, and authenticity and sincerity in the postmodern age.

SOCI 3280. Sociology of Gender. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.

Feminist theories and methodologies on gender, with an emphasis on contemporary American society and the intersection of gender, race, and class. Topics include socialization, sexual orientation, reproduction, violence, family and household, work and global restructuring, and politics.

SOCI 3290. Gender and Work. 3 hours.
Not open to students with credit in SOCI 4270.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Research and theories on the role of gender in shaping labor market opportunities, experiences, and rewards; remedies for enduring problems, including those applied in United States workplaces; and new research directions.

SOCI(AFAM) 3300. Global Perspectives on Racism and Sexism. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Race and gender relations and discrimination around the globe; the origins and practice of race and gender domination and empowerment in the Americas, Africa, Asia, Europe, the Middle East, and the Pacific Rim.

SOCI(AFAM) 3310. Race and Culture. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Evolution of cultures among racial groups as part of, and in contrast to, Western civilization. Particular attention is given to the ways race and culture intersect to provide styles, practices, and patterns of living for individuals in contemporary society.

SOCI 3320. Sociology of Urban Life. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The use of urban areas by individuals and institutions. Topics include urban ecology, crime, residential segregation, and poverty.

SOCI 3330. On the Road: Tourists, Travelers, Vacationers, Pilgrims, and Adventurers. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The common experience of travel, particularly that associated with tourism, pilgrimages, and migration. Analysis of travel motifs, including cultural tours; nature/wilderness tours; local social worlds; the lure of cities; and encounters with roadside attractions and amusement parks.

SOCI 3400. Environmental Sociology. 3 hours.
Not open to students with credit in SOCI 2400.
The social causes and consequences of resource scarcity and environmental depletion. Topics include world population growth, pollution, depletion of energy sources, species extinction, and environmental movements.

SOCI(POLS)(ANTH) 3450. Sociopolitical Ecology. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The relationship between humans and their environment; ecological and social theories about environmental policies and problems.

SOCI 3460. Political Sociology. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Theoretical approaches to the state; the formation and legitimation of nations; collective action, social movements, and revolutions. Focus will be on issues of class, gender, and race.

SOCI 3500. Sociology of the Political Economy. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The balance of political power between classes, races, and nations, and how it shapes the economic forces that determine social order and the success or failure of social change.

SOCI 3550. Population Issues. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Population trends, policies, and issues around the world with special emphasis on fertility, mortality, and migration. Students will also learn rudimentary techniques of demographic analysis.

SOCI 3590. Qualitative Methods of Social Research. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Qualitative sociological analysis that emphasizes participant observation, intensive interviewing, and analysis of text; examples of field work studies; the design and completion of an independent field research project.

SOCI 3600. Logic and Practice of Sociological Research. 3 hours.
Prerequisite: [(SOCI 1101 or SOCI 1600) and STAT 2000] or permission of department.
The basic ideas and techniques used to conduct and evaluate research. Topics include the purposes and types of social research; the logic and interpretation of bivariate and multivariate data analysis; and the use of microcomputers to analyze evidence commonly used in social research.

(SOCI)POLS 3700. Research Methods in Criminal Justice. 3 hours.
Not open to students with credit in POLS 4150.
Prerequisite: POLS 1101.
Fundamental principles of social science research and related research design. Structured to develop students' abilities to think clearly, critically, and

logically about social science issues through the scientific evaluation of empirical issues and evidence.

SOCI 3730. Social Psychology. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The relationship between individuals and groups, as it shapes the development of social competence, personality, self-concept, motivation, attitudes, and cognition.

SOCI 3740. Sociology of Sport. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The structural and cultural relationship of sport to society; contemporary issues in sport.

SOCI 3750. Sociology of Work and Industry. 3 hours.
Not open to students with credit in SOCI 2750.
The structure of work and industry with an emphasis on the rise of management and the modern corporation, the growth and decline of labor unions, and the emergence of service industries.

SOCI 3810. Criminology. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The nature, extent, and correlates of crime; theories of criminal behavior and victimization.

SOCI 3820. Communities and Crime. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Theory and research on urban crime and spatial variation in crime rates; the impact of crime on the structure of communities and its role in neighborhood decline.

SOCI 3830. Violence and Society. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Theory and research on the relationship between criminal violence and social structure and processes.

SOCI 3850. Sociology of Occupations. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Major processes including occupational choice, socialization, careers, and professionalization; contemporary issues concerning women and work, minorities and work, the consequences of bureaucratic and technological changes, and the impact of work on non-work behavior.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SOCI 3860. Sociology of Alcohol and Drug Use. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Sociohistorical analysis of cultural and policy changes regarding alcohol and psychoactive drugs; theoretical approaches to defining abuse and addiction; causes of substance abuse; treatment strategies, especially Alcoholics Anonymous; and intervention strategies, especially those based in the workplace.

SOCI 3950. Sociology of Organizations. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Research and theories emphasizing organizational structures and cultures; bureaucracies and their alternatives; the control of workers; and the role of gender in organizations.

SOCI 4010. Seminar in Culture. 3 hours.
Prerequisite: SOCI 2500 or SOCI 3010 or permission of department.
Special topics in culture for advanced undergraduates.

SOCI 4240/6240. Sociology of War and the Military. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
War as a phenomenon with social causes and consequences; the military as an occupation and organization. Topics include conscription; the historical experiences of women and minorities in the military; and war as a source of collective memory for generations, ethnic groups, and nations.

SOCI 4260. Seminar in Sociological Theory. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: SOCI 3220 or permission of department.
Selected topics in classic and contemporary theory for advanced undergraduates.

SOCI 4280. Global Perspectives on Gender. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The diverse social and cultural manifestations of gender located within an economic, social, and political context. Case studies drawn from Africa, Asia, the Middle East, Latin America, and the Caribbean.

SOCI 4350. Seminar in Work and Occupations. 3 hours.
Prerequisite: SOCI 3750 or SOCI 3850 or SOCI 3950 or permission of department.

The organization of work and occupational processes, such as the emergence of temporary and contract work, the decline of manufacturing jobs and the rise of the service sector, and the impact of technology on the structure of work and the experiences of workers.

SOCI(AFAM) 4370. Seminar in Race and Ethnicity. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
Special topics in race and ethnicity for advanced undergraduates.

SOCI 4470. Seminar in Deviance and Social Control. 3 hours.
Prerequisite: [SOCI 1101 or SOCI 1600] and SOCI 2470.
Special topics in deviance and responses to deviance, with an emphasis on theoretical perspectives.

(SOCI)CHFD 4610/6610. The Family. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Family study utilizing data from the fields of anthropology, individual and social psychology, history, sociology, economics, and psychiatry.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SOCI 4650/6650. Sociology of Aging. 3 hours.
Prerequisite: SOCI 1101 or SOCI 1600 or permission of department.
The status, roles, and demographic aspects of the aging population and its relationship with social institutions.

SOCI 4730. Seminar in Social Psychology. 3 hours.
Prerequisite: SOCI 3270 or SOCI 3730 or permission of department.
Special topics in social psychology for advanced undergraduates.

SOCI 4830. Sociology of Law. 3 hours.
Prerequisite: [(SOCI 1101 or SOCI 1600) and SOCI 2470] or permission of department.
The nature of law, and the ways the legal system reflects its broader social context.

SOCI 4900. Supervised Research in Sociology. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Research conducted under the direction of a faculty member; includes a review of the literature, data collection and analysis, and interpretation of research findings.
Non-traditional format: Weekly meetings arranged between instructor and student.

SOCI 4960H. Supervised Research in Sociology (Honors). 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of Honors.
Research conducted under the direction of a faculty member, including a review of the literature, data collection and analysis, and interpretation of research findings.
Non-traditional format: Weekly meetings arranged between instructor and student.

SOCI 4990H. Honors Thesis. 3 hours.
Prerequisite: SOCI 1101 and permission of Honors.
Individual research in the major or a closely related field.
Non-traditional format: Students will meet with faculty members on a regular basis.

(SOCI)POLS 5500. Criminal Justice Internship. 4 hours.
Prerequisite: POLS 1101.
An internship specifically designed for and required of students pursuing a degree in criminal justice. Centers on regular and systematic analysis of experimental learning under direct faculty supervision.
Non-traditional format: Student works independently and meets with project director several times during the semester to monitor progress and discuss requirements for written paper.

(SOCI)POLS 5510. Criminal Justice Internship. 4 hours.
Prerequisite: POLS 1101.
An internship specifically designed for and required of students pursuing a degree in criminal justice. Centers on the design, execution, and reporting of original research related to the specific placement or internship.
Non-traditional format: Internship.

(SOCI)POLS 5520. Criminal Justice Internship. 4 hours.
Prerequisite: POLS 1101.
An internship specifically designed for and required of students pursuing a degree in criminal justice. Criminal justice students are required to intern in an approved agency full time over the semester.
Non-traditional format: Internship.

(SOWK) Social Work

School of Social Work

SOWK 1010. Freshman Seminar. 1-3 hours.
Are men really from Mars and women from Venus? Do glances, words, and gestures have different meanings for the sexes? This seminar will introduce the theory and art of communication between the sexes. The cycle of words sent and received, with

interpretative stops along the way, will be discussed, dissected, and evaluated. Social exchange between men and women and its application in the helping professions will also be discussed.

SOWK 1020. Freshman Seminar. 1 hour.
Social work in film. Analysis of social issues portrayed in contemporary cinema. Selected topics, such as addictions, child abuse, adoptions, disabilities, cultural diversity, friendships, or aging.

SOWK 2101. The Social Welfare Institution. 3 hours.
Not open to students with credit in SOWK 2107H.
History and current status of social welfare programs and services in the United States. Philosophical, religious, economic, and political perspectives on social welfare. A comparison of approaches to social welfare in the United States and other developed nations.

SOWK 2107H. The Social Welfare Institution (Honors). 3 hours. 6 hours lab per week.
Not open to students with credit in SOWK 2101.
Prerequisite: Permission of Honors.
History and current status of social welfare programs and services in the United States. Philosophical, religious, economic, and political perspectives on social welfare. A comparison of approaches to social welfare in the United States and other developed nations.
Non-traditional format: Learning teams, which promote critical thinking, research, writing, and discussion skills, and which require extensive work out of class, will be the primary delivery method.

SOWK 2154. The Profession of Social Work. 4 hours. 3 hours lecture and 1 hour lab per week.
History and current status of the profession of social work. The role of the social worker in various fields of practice. The profession's commitment to social and economic justice for vulnerable and oppressed populations. The person-in-environment perspective. Communication and interviewing skills lab.

SOWK 2155. Communication in the Helping Process. 3 hours. 2 hours lecture and 2 hours lab per week.
A study of the values, knowledge, and skills of effective human communication and interpersonal relations as necessary for planned change with individuals, groups, families, and communities. Includes observation, collection, and description of data, verbal and non-verbal communication, and their relevance to social work practice. Issues in communication regarding minority and oppressed populations are integrated in all course content.

SOWK 5326. Foundations of Social Work Research. 3 hours. 1.5 hours lab per week.
Prerequisite: SOWK 5524.
Corequisite: SOWK 5534 and SOWK 5757 and SOWK 5835.
Basic principles of social science research based on the scientific method. Analytical and evaluative methods of knowledge building and application in social work and social welfare settings. Empirically based practice and the evaluation of the individual social worker's own practice interventions.
Non-traditional format: Learning teams, which promote critical thinking, research, writing, and discussion skills, and which require extensive work out of class, will be used.

SOWK 5340. Human Behavior in the Social Environment. 3 hours.
Prerequisite: SOWK 2154.
Introduces students to an ecological systems perspective for understanding human behavior in contemporary contexts. Understanding individual development within family, community and cultural settings over time. Special emphasis on an understanding of the strengths within minority cultures.

SOWK 5524. General Practice of Social Work I. 3 hours.
Prerequisite: SOWK 2101 and SOWK 2154.
Theory and practice of generalist social work. Knowledge, skills, and ethical principles needed for beginning social work practice. Problem identification, assessment, intervention, and evaluation of practice with individuals from a person-in-environment perspective. Lab emphasizes application of theory to cases involving individuals as clients.
Non-traditional format: Learning teams, which promote critical thinking, research, writing and discussion skills, and which require extensive work out of class, will be used.

SOWK 5534. General Practice of Social Work II. 3 hours. 1.5 hours lab per week.
Prerequisite: SOWK 5524.
Corequisite: SOWK 5326 and SOWK 5757 and SOWK 5835.
A continuation of General Practice of Social Work I. Generalist practice principles applied to groups, organizations, and communities. Lab will emphasize application of theory to group and organizational settings and use of management information technology in social work practice.
Non-traditional format: Learning teams, which promote critical thinking, research, writing and discussion skills, and which require extensive work out of class, will be used.

SOWK 5544. General Practice of Social Work III. 3 hours. 2.25 hours lab per week.
Prerequisite: SOWK 5534.
Corequisite: SOWK 5701 and SOWK 5767 and SOWK 5845.
A continuation of General Practice of Social Work II. Generalist practice principles applied to various family types. Issues related to gender, race, ethnicity, sexual orientation, and age as they affect family functioning over time and in community contexts. Lab will emphasize application of theory regarding family centered practice to cases.
Non-traditional format: Learning teams, which promote critical thinking, research, writing and discussion skills, and which require extensive work out of class, will be used.

SOWK 5701. Social Welfare Policy and Services. 3 hours. 1.5 hours lab per week.
Prerequisite: SOWK 5524.
Corequisite: SOWK 5544 and SOWK 5767 and SOWK 5845.
Social insurance, public assistance, and social service programs in the United States. Social welfare within a capitalist economy and an individualistic, democratic society. The influences of American economics and politics on social services and social work practice. Introduction to models of policy analysis.
Non-traditional format: Learning teams, which promote critical thinking, research, writing and discussion skills, and which require extensive work out of class, will be used.

SOWK 5757. Current Issues in Social Work I. 2-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: SOWK 5524.
Corequisite: SOWK 5326 and SOWK 5534 and SOWK 5835.
Current problems and issues in social work and social welfare specifically drawn from interests and experiences of students enrolled.

SOWK 5767. Current Issues in Social Work II. 2-6 hours. Repeatable for maximum 6 hours credit.
Prerequisite: SOWK 5534.
Corequisite: SOWK 5544 and SOWK 5701 and SOWK 5845.
A continuation of Current Issues in Social Work I.

SOWK 5777. Current Issues in Social Work III. 1-9 hours.
A continuation of Current Issues in Social Work II.

SOWK 5835. Practicum and Seminar in Social Work I. 6 hours.
Prerequisite: SOWK 5524.
Corequisite: SOWK 5326 and SOWK 5534 and SOWK 5757.
Generalist practicum and integrative seminar. A minimum of twenty hours of supervised social work practice in a social agency is required.
Non-traditional format: Practicum. Twenty hours per week under supervision in an approved social agency.

SOWK 5845. Practicum and Seminar in Social Work II. 6 hours.
Prerequisite: SOWK 5534.
Corequisite: SOWK 5544 and SOWK 5701.
A continuation of Practicum and Seminar in Social Work I.
Non-traditional format: Twenty hours per week under supervision in an approved social agency.

SOWK 5908. Directed Readings in Social Work. 1-9 hours. Repeatable for maximum 9 hours credit.
Individual study, reading, or projects under the direction of a faculty member.
Non-traditional format: Directed study.

SOWK 5908H. Directed Readings in Social Work (Honors). 1-9 hours. Repeatable for maximum 9 hours credit.
Not open to students with credit in SOWK 5908.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a faculty member.
Non-traditional format: Directed study.

SOWK 5998H. Honors Thesis. 1-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of Honors.
Individual research under the direction of a faculty member.
Non-traditional format: Thesis.

(SPAN) Spanish

College of Arts and Sciences, Department of Romance Languages

Certain courses in Spanish are not open to native speakers. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was Spanish.

SPAN 1001. Elementary Spanish. 4 hours.
Not open to students with credit in SPAN 1002 or two or more years of Spanish in high school.
Open only to students who have had fewer than two years of high school Spanish. Emphasis on conversational Spanish. Development of listening comprehension, speaking, reading, and writing skills. Fundamentals of Spanish grammar and pronunciation. Introduction to Spanish-speaking cultures. Work in the language laboratory. Given in Spanish.
Non-traditional format: This course is also offered

through University System of Georgia Independent Study (USGIS).

SPAN 1002. Elementary Spanish. 4 hours.
Not open to students with credit in SPAN 1110.
Prerequisite: SPAN 1001.
A continuation of Elementary Spanish. Emphasis on conversational Spanish. Development of listening comprehension, speaking, reading, and writing skills. Fundamentals of Spanish grammar and pronunciation. Study of Spanish-speaking cultures. Work in the language laboratory. Given in Spanish.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SPAN 1110. Accelerated Elementary Spanish. 4 hours.
Not open to students with credit in SPAN 1001 or SPAN 1002 or college credit in Spanish.
Prerequisite: Placement Test.
Accelerated course reviewing basic principles of the Spanish language for students with some background of high school Spanish. Given in Spanish.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SPAN 2001. Intermediate Spanish. 3 hours.
Not open to students with credit in SPAN 2002.
Prerequisite: SPAN 1002 or SPAN 1110 or permission of department.
Content-based review of Spanish grammar and systematic vocabulary and skill development. Integration of language, culture, and literature. Given in Spanish.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SPAN 2002. Intermediate Spanish. 3 hours.
Not open to students with credit in SPAN 2120H or SPAN 3010.
Prerequisite: SPAN 2001 or permission of department.
A continuation of Intermediate Spanish. Context-based review of Spanish grammar and systematic vocabulary and skill development. Integration of language, culture, and literature. Given in Spanish.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SPAN 2003. Medical Spanish. 3 hours.
Prerequisite: SPAN 2002.
A study of language, grammar, and culture related specifically to pre-medical studies, pre-pharmaceutical studies, pre-dental studies, medical social work, physical therapy, and various other degreed and preparatory programs for the health care professions. Given in Spanish.

SPAN 2030. Practical Spanish Conversation. 1 hour. Repeatable for maximum 2 hours credit.
Prerequisite: SPAN 2001.
Emphasis is on improving oral expression and developing conversational skills through social interactions, under the direction of the Spanish Resident Language Coordinator. Given in Spanish, in the University Language Community.

SPAN 2120H. Accelerated Intermediate Spanish (Honors). 3 hours.
Not open to students with credit in SPAN 2001 or SPAN 2002.
Prerequisite: (SPAN 1002 or SPAN 1110) and permission of Honors.
Covers materials studied in Intermediate Spanish. Emphasis on advanced readings and grammar review. Also prepares students to enter Spanish Conversation and Composition, Introduction to Literature, and Introduction to Spanish Linguistics.

SPAN 2500. Spanish for Reading Knowledge. 3 hours.
Grammar, idioms, and vocabulary; practice in translating moderately difficult technical and non-technical Spanish. Intended to assist graduate students to satisfy reading knowledge requirement but does not carry graduate credit. Not to be used to satisfy undergraduate language requirement. Not open to Spanish majors.

SPAN 2550. Latino Literature, Language, and Culture. 3 hours.
Not open to students with credit in ROML 2550.
The literary, socio-linguistic, and cultural presence of representative Hispanic groups in the United States. Intended for Spanish speakers. Given in Spanish.

SPAN 2950. Study Abroad in Spanish. 3 hours.
Prerequisite: Permission of department.
Spanish language, literature, and culture courses taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

SPAN 2960. Study Abroad in Spanish. 3 hours.
Prerequisite: Permission of department.
Spanish language, literature, and culture courses taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

SPAN 2970. Study Abroad in Spanish. 3 hours.
Prerequisite: Permission of department.
Spanish language, literature, and culture courses taught at study abroad programs of the University System of Georgia and non-University of Georgia programs.

SPAN 3010. Spanish Conversation and Composition. 3 hours.
Prerequisite: SPAN 2002 or SPAN 2120H or permission of department.
Primary emphasis is divided between conversation and composition skills. The two phases of the course are correlated to include the skills of reading and listening comprehension. Given in Spanish. Not open to native speakers.

SPAN 3010H. Spanish Conversation and Composition (Honors). 3 hours.
Not open to students with credit in SPAN 3010.
Prerequisite: SPAN 2002 and permission of Honors.
Practice in composition and conversation skills in Spanish, beyond Spanish Conversation and Composition. Emphasis is divided equally between composition and conversation. Not open to native speakers. Given in Spanish.

SPAN 3030. Introduction to Literature. 3 hours.
Not open to students with credit in SPAN 3030H.
Prerequisite: SPAN 3010.
Critical reading and interpretation of Spanish and Spanish-American literature through the study of representative texts in the various genres. Basic vocabulary and techniques of literary analysis and criticism. Given in Spanish.

SPAN 3030H. Introduction to Literature (Honors). 3 hours.
Not open to students with credit in SPAN 3030.
Prerequisite: (SPAN 3010 or SPAN 3010H) and permission of Honors.
Critical reading and interpretation of Spanish and Spanish-American literature through the study of representative texts in the various genres. Basic vocabulary and techniques of literary analysis and criticism. May be substituted by Spanish majors or minors for Introduction to Literature. Given in Spanish.

SPAN(LING) 3050. Introduction to Spanish Linguistics. 3 hours.
Prerequisite: SPAN 3010.
Fundamentals of language in general and Spanish in particular. Linguistic knowledge, language variation, and language contact phenomena. Representative Spanish sound systems, syllabic structure, sentence patterns, structure and meaning of words. Analysis of data from oral and written registers. Given in Spanish.

SPAN 4010. Advanced Conversation and Composition. 3 hours.
Prerequisite: SPAN 3010.
Practice in composition and conversation skills in Spanish, beyond Spanish Conversation and Composition. Emphasis is divided equally between composition and conversation. Given in Spanish. Not open to native speakers.

SPAN 4040. Spanish Literature and Culture from the Middle Ages through the Baroque. 3 hours.
Prerequisite: SPAN 3030 and SPAN(LING) 3050.
Major works, literary movements, and cultural background of Spanish literature from the Middle Ages to the end of the seventeenth century. Texts will include examples of poetry, prose, and drama. Given in Spanish.

SPAN 4050. Spanish Literature and Culture from the Enlightenment through the Present. 3 hours.
Prerequisite: SPAN 3030 and SPAN(LING) 3050.
Major works, literary movements, and cultural background of Spanish literature from 1700 to the present. Texts will include examples of poetry, prose, and drama. Given in Spanish.

SPAN 4060. Spanish-American Literature and Culture from the Colonial Period through the Independence Period. 3 hours.
Prerequisite: SPAN 3030 and SPAN(LING) 3050.
Major works, literary movements, and cultural background of Spanish-American literature from the Colonial period through Independence. Texts will include examples of poetry, prose, and drama. Given in Spanish.

SPAN 4070. Spanish-American Literature and Culture from Modernism through the Present. 3 hours.
Prerequisite: SPAN 3030 and SPAN(LING) 3050.
Intensive reading and analysis of significant writers and the literary movements of which they are representative. Given in Spanish.

SPAN 4080. Studies in Spanish Literature and Culture. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: SPAN 3030 and SPAN(LING) 3050.
Specific areas of major importance in the cultural and literary developments in Spain and Spanish America. The approach will contextualize relevant literary examples within historical, philosophical, linguistic, political, and ideological issues. Given in Spanish.

SPAN 4090. Practicum in Service Learning. 1 hour.
Prerequisite: SPAN 4010.
Practical use of the Spanish language through community involvement. Students will work directly with the Spanish-speaking population in the Athens area in planned and systematic activities coordinated between the Department of Romance Languages and a variety of community organizations. Non-traditional format: Students will be earning

one hour of credit for volunteering in the local community. Students will be honing their language skills and the Practicum will be monitored by an instructor of record, but there will be no traditional classroom activities or course assignments, such as exams, quizzes, and final papers.

SPAN 4120/6120. Topics in Spanish Culture, Language, and Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: SPAN 3030 and SPAN(LING) 3050.
Selected topics in Hispanic culture, civilization, language, linguistics, literature, or literary theory. Given in Spanish.

SPAN 4150. Business Spanish. 3 hours.
Prerequisite: SPAN 3010 and (SPAN 3030 or SPAN(LING) 3050 or ACCT 2101).
Commercial Spanish and the environment of the Spanish-speaking business world. Business vocabulary, basic business and cultural concepts, and situational practice. Topics include economic geography of Spanish-speaking countries, company organization, management, banking, investment, personnel, office systems, goods and services, marketing, and letter writing. Given in Spanish. Business students should check with their advisor for prerequisites.

SPAN 4250. Advanced Business Spanish. 3 hours.
Prerequisite: SPAN 4150.
Business vocabulary, basic business and cultural concepts, and situational practice necessary to be successful in today's Spanish-speaking business world. Key topics in grammar and vocabulary are also reviewed. Given in Spanish.

SPAN(LING) 4650. Spanish Phonetics and Language Variation. 3 hours.
Prerequisite: SPAN(LING) 3050.
Speech organs and systematic description of Spanish sounds. Comparison of English and Spanish patterns of stress, pronunciation, and intonation. Examination of recurrent pronunciation errors. Description of major geographical and social dialects. Practice in pronunciation and transcription of sounds. Given in Spanish.

SPAN 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and junior or senior standing.
Individual study, readings, or projects under the supervision of a project director.
Non-traditional format: Directed study.

SPAN 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and junior or senior standing.
Individual study, readings, or projects under the guidance of a project director.
Non-traditional format: Directed study.

SPAN 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors and junior or senior standing.
Individual study, readings, or projects under the guidance of a project director.
Non-traditional format: Directed study.

SPAN 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors and senior standing.
Individual research in the major field or in a closely related field.
Non-traditional format: Students will meet with faculty members on a regular basis.

(SPCM) Speech Communication

College of Arts and Sciences, Department of Speech Communication

SPCM 1010. Communication in Human Society. 3 hours.
Not open to students with credit in SPCM 1500.
The role of speech communication in the constitution of human beings and their interrelationships. Explores individual differences in communication competence, and role of communication in formation, development, and maintenance of interrelationships.

SPCM 1100. Introduction to Public Speaking. 3 hours.
The fundamental principles and practices of public speaking, including systematic library research, creative analysis and synthesis of topics, organization, language, delivery, audience adaptation, reasoning, arguments, and supporting materials.

SPCM 1500. Introduction to Interpersonal Communication. 3 hours.
Communication as it occurs in two-person and small group settings. Primary concern is given to understanding how an individual can use verbal and nonverbal communication to improve relationships and derive maximum social rewards.

SPCM 1800. Cultural Diversity in Communication. 3 hours. 2 hours lecture and 1 hour lab per week.
Not open to students with credit in SPCM 4800.
Patterns of public and interpersonal communication among and between ethnic groups, especially North American minority cultures, strategies for fostering group identity, difficulties in inter-group

communication, and skills for improving the quality of those interactions.

SPCM 2100. Advanced Public Communication. 3 hours.
Prerequisite: SPCM 1100 or permission of department.
Advanced practice in varied public communication contexts such as community presentations, press conferences, media interviews, and persuasive speaking to hostile audiences. In addition to developing platform speaking skills, emphasis is placed on interactional skills and providing communication assistance to organizations and individuals.

SPCM 2150H. Perspective on Public Communication (Honors). 3 hours.
Not open to students with credit in SPCM 1100.
Prerequisite: Permission of Honors.
Practice in delivery and criticism of speeches, employing models from great speakers and speeches in history.

SPCM 2300. Business and Professional Communication. 3 hours. 2 hours lecture and 1 hour lab per week.
Not open to students with credit in MGMT(SPCM) 5960.
The principles and skills for making effective business presentations. Students will learn to manage communication in a variety of professional and organizational contexts. Emphasis is on clarity and persuasiveness in communicating with clients, associates, and other decision-makers.

SPCM 2310. Scientific Communication. 3 hours.
The theory and practice of communicating scientific learning to nonscientists. The course is designed to equip science students with the skills necessary to bring scientific information to professional audiences and to the general public through the spoken word.

SPCM 2400. Oral Decision Making. 3 hours.
The theory and practice of democratic decision making, from researching a topic systematically in specialized library sources to reaching a workable solution through group discussion. Second phase will involve theory and practice of debating and implementing decisions through parliamentary procedure.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SPCM 2510. Introduction to Small Group Communication. 3 hours.
Emphasizes student involvement in groups working on socially significant projects of their own choice. Examines factors which affect quality of communication and group outcomes; interpersonal and task behaviors, leadership, norms, conflict resolution, and creativity.

SPCM 2520. Introduction to Interviewing. 3 hours.
Not open to students with credit in MGMT(SPCM) 5870.
Information gathering, problem solving, and persuasive communication skills in dyadic settings. Survey, journalistic, job seeking, and employee appraisal interview forms. Students gain experience conducting interviews across a variety of situations.

SPCM 2550H. Perspective on Interpersonal Communication (Honors). 3 hours.
Not open to students with credit in SPCM 1500.
Prerequisite: Permission of Honors.
Through lectures and class discussion, students will critically examine theory and research in interpersonal communication. Emphasis is placed both on learning about the communication process and on becoming a more effective participant in it.

SPCM(AFAM) 2810. Communication in African American Communities. 3 hours.
Rhetorical strategies and patterns of orality in African American communication, communication styles in conflict, and skill development for cultural interaction.

SPCM 3300. Introduction to Rhetorical Criticism. 3 hours.
Prerequisite: SPCM 1100.
Rhetorical approaches to the criticism of public communication. Intensive practice in writing rhetorical analyses will be provided.

SPCM 3310. Case Studies in Public Communication. 3 hours. Repeatable for maximum 6 hours credit. 6 hours lab per week.
Application of rhetorical theory and criticism to one or more case studies, ranging from recurring persuasive strategies in the Lincoln-Douglas debates of 1858, to the role, function, and impact of public discourse in the Montgomery boycott of the 1950s.

SPCM 3320. Environmental Communication. 3 hours.
Human actions that affect the environment are dependent on how we think and communicate about nature and the environment. This class analyzes communication patterns about nature and humanity's relation to nature. In particular, it examines messages of activists, scientists, governmental agencies, and industries relating to environmental protection.

SPCM 3500. Interpersonal Communication Theory. 3 hours.
Prerequisite: SPCM 1010 or SPCM 1100 or SPCM 1500.
Major theories of human communication, with special emphasis upon interpersonal communication. The role, function, and assumptions of theoretical approaches will be discussed.

SPCM 3700. Empirical Research Methods In Communication. 3 hours.
Prerequisite or corequisite: STAT 2000 or STAT 2210.
Social science research methods in interpersonal communication. Covers formalizing research questions, conceptual and operational definitions, hypothesis testing, measurement, sampling, research design, and computer analysis.

SPCM(AFAM) 3820. Interracial Communication. 3 hours.
An applied approach to understanding the significance of interracial communication in Western Society. The societal influences of history, language, and mass media in shaping our knowledge and understanding of positive interracial relationships.

SPCM 4200. Introduction to Rhetorical Theory. 3 hours.
Prerequisite: SPCM 3300 or permission of department.
Rhetorical theory in classical, modern, and contemporary times.

SPCM 4210. Classical Rhetoric. 3 hours.
Prerequisite: SPCM 3300 or permission of department.
The theory and practice of rhetoric in the classical period. The course focuses principally upon Plato, Aristotle, Cicero, and Augustine.

SPCM 4220. Theories of Argumentation. 3 hours.
Prerequisite: SPCM 3300 or permission of department.
Process by which people give reason to justify their acts, beliefs, attitudes, and values and to influence the thought and action of others. Traditional and contemporary theories of argumentation and critical analysis of public argument.

SPCM 4310/6310. Communication Strategies in Government. 3 hours.
Prerequisite: SPCM 3300 or permission of department.
Communication strategies and activities in the executive and legislative branches of local, state, and national government. Case study approach incorporated into the class.

SPCM 4320. Communication Strategies in Political Campaigns. 3 hours.
The role communication plays in deciding which candidate will run for office, the nomination of candidates, and the election of candidates to office.

SPCM 4330. Communication Strategies in the Courtroom. 3 hours.
Prerequisite: SPCM 3300.
How verbal communication skills and strategies of persuasion are used in a variety of legal settings. Includes interviewing, courtroom speeches, witness examination, jury selection and deliberation, as well as issues of judicial argumentation and reasoning and effects of media on litigation outcomes.

SPCM 4340/6340. Communication and Religion. 3 hours.
The nature and practice of communication in a variety of religious traditions. Notions of sacred symbolism, myth, revelation, hermeneutics, and apologetics are especially emphasized.

SPCM 4360. Communication Strategies in Social Movements. 3 hours.
Prerequisite: SPCM 3300.
The rhetorical nature, function, development, and impact of social movements as applied to one or more case studies.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SPCM 4370/6370. Women and United States Public Discourse. 3 hours.
Prerequisite: SPCM 3300 or permission of department.
History and criticism of speeches by United States women in nineteenth- and twentieth-century social reform movements, especially woman's rights and feminism.

SPCM 4500. Advanced Interpersonal Communication. 3 hours.
Prerequisite: SPCM 1500 and SPCM 3700.
Communication in personal relationships from periods of relational development through relational disengagement. Emphasis on understanding and applying social scientific theories of communication.

SPCM 4510. Nonverbal Communication. 3 hours.
The functional potential of each type of nonverbal communication. Primary emphasis is given to demonstrating the value of specific kinds of nonverbal cues in communicating successfully in such real world settings as the job interview, male-female interaction, and the courtroom.

SPCM 4520. Persuasion. 3 hours.
Prerequisite: SPCM 3700.
The impact of persuasive communication is studied with emphasis on source, message, medium of presentation, and audience effects. Theoretical approaches to persuasion and persuasive communication.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

SPCM 4530. Advanced Small Group Communication. 3 hours.
Prerequisite: SPCM 3700.
Theory and techniques of small group discussion, with emphasis on current experimentation and research. Course content includes the ways in which communication influences and is influenced by group formation, development of group norms, group performance, and other topics.

SPCM(HPRB) 4610/6610. Health Communication. 3 hours.
Communication about health with physicians and other providers, within support groups and health care organizations, and by public figures, groups, and organizations.

SPCM 4800. Intercultural Communication. 3 hours.
Prerequisite: SPCM 3700 or permission of department.
Factors that facilitate or impede effective communication between members of different cultural groups. Considers interactions between people from different nations as well as co-cultures within the same nation. Effects of differing world-views, value systems, language varieties, nonverbal codes, and relational norms. Skills for disseminating ideas across cultures and for building intercultural competence.

SPCM(AFAM) 4810. African American Rhetoric and Communication. 3 hours.
The history and criticism of the communication of African American speakers, with emphasis upon oral rhetoric relating to social-political development since 1860.

SPCM(AFAM) 4830/6830. African American Relational Communication. 3 hours.
Undergraduate prerequisite or corequisite: SPCM 1500 or SPCM 3700 or AFAM 2000 or PSYC(AFAM) 2150 or AFAM(PSYC) 3150.
Interpersonal communication within African American relationships from a holistic framework. Historical, sociological, and psychological factors that affect individual behaviors within these relationships, including gender socialization from Africa to America.

SPCM 4900. Special Topics in Communication. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: SPCM 3300 and SPCM 3700.
Selected and rotating topics such as humor and communication, visual communication, or communication training in business and industry.

SPCM 4910. Internship in Communication. 3-6 hours.
Prerequisite: [(SPCM 1010 or SPCM 1100 or SPCM 1500) and (SPCM 3300 and SPCM 3700)] or permission of department.
Communication theory and research to public or private sector enterprise. Emphasis on observation and analysis of communication behaviors in workplace contexts.
Non-traditional format: Field-based internship.

SPCM 4920. Debate Practicum. 1-3 hours. Repeatable for maximum 6 hours credit. 3 hours lab per week.
Prerequisite: Permission of department.
Concentration on the practice of intercollegiate debate. Open to students who travel to debate tournaments.
Non-traditional format: Practicum.

SPCM 4930. Directed Study in Communication. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: SPCM 3300 and SPCM 3700.
Independent, intensive, and extended research conducted under the supervision of a faculty member.
Non-traditional format: Individual student/professor interaction.

SPCM 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a professor.

SPCM 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a professor.

SPCM 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a professor.

SPCM 4990H. Honors Thesis in Speech Communication. 3-9 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of Honors.
Prerequisite or corequisite: SPCM 3300 and SPCM 3700.
Individual research in major field of study under the direction of a Speech Communication faculty member. Project result is a paper of scholarly significance, meeting standards and requirements for an Honors thesis. Student will be expected to present or defend thesis in a public forum.
Non-traditional format: Independent reading/study/data analysis format with periodic meetings with the professor who is directing the project.

(SPCM)MGMT 5960. Organizational Communication. 3 hours.
Prerequisite: MGMT 3000 or permission of department.
Communication policies, procedures, and practices in administration. Students will have the opportunity to develop both written and oral communication skills and to identify philosophies, methods, and characteristics of management communication.

(SPED) Special Education

College of Education, Department of Special Education

SPED 2000. Survey of Special Education. 3 hours.
Prerequisite: Permission of department.
Corequisite: SPED 2000L only for Special Education.
Individuals with special needs, including possible impact, causes, and characteristics of specific needs across life spans and cultural diversity. Topics include legal requirements, ethical implications, education strategies, collaboration between regular and special educators, inclusion, family involvement, and current issues relating to individuals with special needs.

SPED 2000L. Survey of Special Education Laboratory. 1 hour. 1 hour lab per week.
Prerequisite: Permission of department.
Corequisite: SPED 2000.
Students examine a variety of settings which provide services to individuals with disabilities to gain an overview of the issues of exceptionality in society. Private transportation will be necessary.

SPED 3030. Introduction to Assessing Individuals with Disabilities. 3 hours.
Prerequisite: SPED 2000 and permission of department.
Corequisite: SPED 3030L.
Educational and adaptive behavior assessment of individuals with disabilities. Basic measurement concepts and procedures for administering standardized, informal, and curriculum-based tests.

SPED 3030L. Introduction to Assessing Individuals with Disabilities Laboratory. 1 hour. 1 hour lab per week.
Prerequisite: Permission of department.
Corequisite: SPED 3030.
Laboratory to be taken with Introduction to Assessing Individuals with Disabilities.

SPED 3040. Introduction to Individuals with Special Needs. 4 hours.
Prerequisite: SPED 2000 and permission of department.
The characteristics of individuals with special needs, including mental retardation, behavior disorders, and learning disabilities. Emphasis is on school-related issues, such as the eligibility and placement of students in appropriate programs, including the development of individualized education programs; and life-long adjustment problems.

SPED 3050. Classroom and Behavior Management for Individuals with Disabilities. 3 hours.
Prerequisite: Permission of department.
Corequisite: SPED 3050L.
Classroom and behavior management program design based on the principles and procedures of applied behavior analysis. Emphasis is on proactive strategies that promote learning and prosocial behavior.

SPED 3050L. Classroom and Behavior Management for Individuals with Disabilities Laboratory. 1 hour. 1-5 hours lab per week.
Prerequisite: Permission of department.
Corequisite: SPED 3050.
Laboratory to be taken with Classroom and Behavior Management for Individuals with Disabilities.

SPED 4000/6000. Directed Study in Special Education. 1-10 hours. Repeatable for maximum 10 hours credit.
Prerequisite: Permission of department.
Specialized training appropriate to the needs of selected individuals.
Non-traditional format: Directed study.

SPED 4040. Special Education Technology. 3 hours.
Prerequisite: SPED 2000 and permission of department.
Corequisite: SPED 4040L.
Technology for managing, assessing, and teaching across multiple computer operating systems. The use of assistive technology devices that allow access to computers for those individuals with physical

challenges. Multicultural issues relating to technology access will be addressed in readings, lecture, and practicum experiences.

SPED 4040L. Special Education Technology Laboratory. 1 hour. 1 hour lab per week.
Prerequisite: SPED 2000 and permission of department.
Corequisite: SPED 4040.
Laboratory to be taken with Special Education Technology.

SPED 4100. Instruction of Individuals with Mild Disabilities. 3 hours.
Prerequisite: SPED 2000 and SPED 3040 and permission of department.
Corequisite: SPED 4100L.
The practical application of research-based instructional methods for students with high incidence disabilities.

SPED 4100L. Instruction of Individuals with Mild Disabilities Laboratory. 1 hour. 1 hour lab per week.
Prerequisite: Permission of department.
Corequisite: SPED 4100.
Laboratory to be taken with Instruction of Individuals with Mild Disabilities.

SPED 4120. Instruction of Individuals with Moderate to Severe Disabilities. 3 hours.
Prerequisite: Permission of department.
Corequisite: SPED 4120L.
Preferred practices for teaching individuals with moderate to severe disabilities. Emphasis of curricula, curriculum-based assessment, interventions, diversity, collaboration, instructional planning, and curriculum adaptations.

SPED 4120L. Instruction of Individuals with Moderate to Severe Disabilities Laboratory. 1 hour. 1 hour lab per week.
Prerequisite: Permission of department.
Corequisite: SPED 4120.
Laboratory to be taken with Instruction of Individuals with Moderate to Severe Disabilities.

SPED(EDEC) 5100. Introduction to Early Childhood Special Education. 3 hours.
Prerequisite: Permission of department.
Meeting individual needs of children with disabilities in early childhood education environments. Emphases on methods for including young children with disabilities in typical environments. Topics include history and rationale for ECSE, family focused intervention, methods for teaming, embedding developmentally appropriate objectives in natural contexts.

SPED 5400. Collaboration Among Families and Professionals. 3 hours.
Prerequisite: Permission of department.
Models for collaborating with families of individuals with disabilities and other professionals and paraprofessionals. Emphasis on family systems, teaming, consultation, and diversity.

SPED 5450. Student Teaching Seminar. 3 hours.
Prerequisite: Permission of department.
Corequisite: SPED 5460.
Discussion of student teaching experiences and current topics.

SPED 5460. Student Teaching in Special Education. 12 hours.
Prerequisite: Permission of department.
Corequisite: SPED 5450.
Supervised full-time field experience in teaching individuals with mild disabilities.
Non-traditional format: Field-based student teaching in schools.

(STAT) Statistics

College of Arts and Sciences, Department of Statistics

STAT 2000. Elementary Statistics. 4 hours. 2 hours lecture and 4 hours lab per week.
Not open to students with credit in STAT 2100H or STAT 2210 or MSIT 3000.
Statistics at a level which assumes knowledge of high school algebra. Descriptive statistics, random variables, probability distributions, sampling distributions, confidence interval estimation and hypothesis testing. Simple linear regression and correlation.

STAT 2100H. Introduction to Statistics and Computing (Honors). 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in STAT 2000 or STAT 2210 or MSIT 3000.
Prerequisite: Permission of Honors.
Sampling theory including sample survey design; descriptive statistics; statistical distributions and their uses; estimation; introductory statistical inference including z-test and t-test for one sample (hypothesis testing); analysis of differences in two means; simple linear regression and correlation; goodness of fit tests and contingency tables.

STAT 2210. Introduction to Statistics and Computing. 4 hours. 3 hours lecture and 2 hours lab per week.
Not open to students with credit in STAT 2100H or STAT 2000 or MSIT 3000.
Sampling theory including sample survey design; descriptive statistics; statistical distributions and

their uses; estimation; introductory statistical inference including z-test and t-test for one sample (hypothesis testing); analysis of differences in two means; simple linear regression and correlation; goodness of fit tests and contingency tables.

STAT 3000. Statistical Methods for Business. 3 hours.
Not open to students with credit in STAT 4210 or MSIT 3000 or MSIT 3000H.
Prerequisite: ACCT 2101 and (MIST 2090 or CSCI 1100-1100L).
Statistical methods for analysis of business data. Topics include: descriptive statistics, probability, random variables and distributions, sampling distributions of sample mean and proportion, statistical inference for population mean and proportion for single sample, comparison of two population means and proportions, simple linear regression, and introduction to multiple regression.

STAT 4070/6070. Probability and Statistics for Secondary Teacher's. 3 hours. 2 hours lecture and 1 hour lab per week.
Prerequisite: STAT 2000.
Sampling and statistical studies; basic probability; random variables and their distributions; exploring data using graphical techniques and numerical summaries; exploring relationships between two variables: chi-sq. test of independence; correlation, linear regression; confidence intervals and hypothesis testing for means and proportions. Group projects and activities illustrating concepts will be utilized.

STAT 4100/6100. Applied Stochastic Processes. 3 hours.
Not open to students with credit in STAT 4720/6720 or STAT 8700.
Prerequisite: MATH 2500.
Stochastic processes including discrete, continuous and conditional probability concepts. Definitions and properties of stochastic processes. Markov processes and chains, basic properties, transition matrices and steady state properties. Reliability renewal and queueing processes, expected waiting times, single and multiserver queues.

STAT 4110. Applied Statistics. 3 hours.
Not open to students with credit in STAT 4110H or STAT 4210.
Prerequisite: STAT 2210.
Analysis of variance including completely randomized design, randomized block design, factorial designs, and interaction; regression analysis including linear regression and multiple regression, model checking and analysis of residuals, and model building; nonparametric statistics; power of a test. Computer application by use of a statistical package with programming capabilities.

STAT 4110H. Honors Applied Statistics. 3 hours.
Not open to students with credit in STAT 4110 or STAT 4210.
Prerequisite: STAT 2100H and permission of Honors.
Analysis of variance including completely randomized design, randomized block design, factorial designs, and interaction; regression analysis including linear regression and multiple regression, model checking and analysis of residuals, and model building; nonparametric statistics; power of a test. Computer application by use of a statistical package with programming capabilities. Major project required.

STAT 4210. Statistical Methods. 3 hours.
Not open to students with credit in STAT 4110H or STAT 4110.
Prerequisite: STAT 2000.
Statistical distributions; one- and two-population tests about means, including t-tests and paired-difference tests; one- and two-population tests about the variance; contingency tables and goodness-of-fit tests; non-parametric tests; analysis of variance and simple experimental designs; linear regression and residual diagnostics.

STAT 4220. Applied Experimental Designs. 3 hours.
Prerequisite: STAT 4110H or STAT 4210.
Constructing and analyzing statistical experimental designs; blocking, randomization, replication and interaction; complete and incomplete block designs; factorial experiments; repeated measures; confounding effects.

STAT 4230/6230. Applied Regression Analysis. 3 hours.
Prerequisite: STAT 4210 or STAT 6220 or permission of department.
Applied methods in regression analysis. Topics include univariate linear regression, techniques of multiple regression and model building, ANOVA as regression analysis, analysis of covariance, model selection and diagnostic checking techniques, nonlinear regression, and logistic regression.

STAT 4240/6240. Sampling and Survey Methods. 3 hours.
Prerequisite: STAT 4210 or STAT 6210.
Design of finite population sample surveys. Stratified, systematic, and multistage cluster sampling designs. Sampling with probability proportional to size. Auxiliary variables, ratio and regression estimators, non-response bias.

STAT 4260/6260. Statistical Quality Assurance. 3 hours.
Prerequisite: STAT 4210 or STAT 6220.

Basic graphical techniques and control charts. Experimentation in quality assurance. Sampling issues. Other topics include process capability studies, error analysis, SPRT, estimation and reliability.

STAT 4270/6270. Least Squares Methods. 3 hours.
Prerequisite: STAT 4210 and MATH 2500.
Least squares techniques using matrices. Techniques of matrix algebra and calculus applied to regression and experimental designs.

STAT 4280/6280. Applied Time Series Analysis. 3 hours.
Prerequisite: STAT 4510/6510.
Autoregressive, moving average, autoregressive-moving average, and integrated autoregressive-moving average processes, seasonal models, autocorrelation function, estimation, model checking, forecasting, spectrum, spectral estimators.

STAT 4290/6290. Nonparametric Methods. 3 hours.
Prerequisite: STAT 4210 or STAT 6220.
Techniques and applications of nonparametric statistical methods, estimates, confidence intervals, one sample tests, two sample tests, several sample tests, tests of fit, nonparametric analysis of variance, correlation tests, chi-square test of independence and homogeneity, sample size determination for some nonparametric tests.

STAT 4360/6360. Statistical Programming in SAS. 3 hours.
Prerequisite: STAT 4210 or STAT 4230/6230 or STAT 6220.
Statistical programming techniques, data manipulation, and presentation of analyses using SAS software package.

STAT 4380/6380. Survival Analysis. 3 hours.
Prerequisite: [(STAT 4210 or STAT 6220) and STAT 4510/6510] or permission of department.
Methods for comparing time-to-event data, including univariate parametric and nonparametric procedures, regression models, diagnostics, group comparisons, and use of relevant statistical computing packages.

STAT 4510/6510. Mathematical Statistics I. 3 hours.
Prerequisite: MATH 2500.
Concepts and basic properties of some special probability distributions, independence, moment generating functions, sampling distributions of statistics, limiting distributions.

STAT 4520/6520. Mathematical Statistics II. 3 hours.
Prerequisite: STAT 4510/6510.
Methods and properties of point estimation, confidence intervals, minimum variance unbiased estimators, hypothesis testing, analysis of variance, linear regression.

STAT 4710/6710. Introduction to Probability Theory I. 3 hours.
Prerequisite: MATH 2500.
Probability axioms, combinatorial analysis, random variables, univariate and multivariate distributions, expectations, conditional distributions, independence, and laws of large numbers.

STAT 4720/6720. Introduction to Probability Theory II. 3 hours.
Prerequisite: STAT 4710/6710.
Central limit theorems, random walks, Markov chains and processes, Brownian motion, branching and renewal processes, diffusion processes and queueing processes and applications.

(SWAH) Swahili

College of Arts and Sciences, Department of Comparative Literature

SWAH 1010. Elementary Swahili I. 4 hours.
Fundamentals of the Swahili language and culture. Emphasis on grammar, pronunciation, reading, writing, and conversational skills. Additional laboratory work required.

SWAH 1020. Elementary Swahili II. 4 hours.
Prerequisite: SWAH 1010.
A continuation of Elementary Swahili I. Emphasis on register variation, advanced grammar, and culture.

SWAH 2010. Intermediate Swahili I. 3 hours.
Prerequisite: SWAH 1020 or permission of department.
Introduction to complex linguistic and cultural structures, role of culture in language learning, reading and writing of literary texts, social history of the language.

SWAH 2020. Intermediate Swahili II. 3 hours.
Prerequisite: SWAH 2010.
A continuation of Intermediate Swahili I. Introduction to literary texts, poetry, newspapers and magazines, and everyday language use.

SWAH(AFAM) 3010. Advanced Swahili I. 3 hours.
Prerequisite: SWAH 2020.
Preparation for study or research using authentic Swahili material. Provides additional knowledge of East Africa through geography, history, political, and economic structures. Focus on critical reading and the interpretation of standard and colloquial Swahili.

SWAH 3020. Advanced Swahili II. 3 hours.
Prerequisite: SWAH(AFAM) 3010.
A continuation of Advanced Swahili I. Focus on advanced reading and comprehension of novels, thematic texts, rhetoric, scientific materials, documents, and other archival materials. Substantial attention paid to historical and cultural aspects of the language.

SWAH(AFAM)(YORB) 3030. Introduction to African Languages, Cultures, and Folklore. 3 hours.
The languages, cultures, folklore, orature, and literature of East Africa and West Africa. While texts will be available in English, students with proficiency in Swahili or Yoruba will examine the literature in its original language.

SWAH(AFAM) 3990. Directed Study in Swahili Language and Literature. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent study and research in Swahili language and literature under the direction of individual faculty members. Focus on reading and analysis of Swahili literary writings (including works in translation).
Non-traditional format: Directed study.

(TELE) Telecommunications

College of Journalism and Mass Communication, Department of Telecommunications

TELE 3010. Introduction to Telecommunications. 3 hours.
The structure of world telecommunication systems with emphasis on the United States. Special attention is given to the regulatory features of the systems, the impact of technology, the economic dynamics, and the range of career possibilities.

TELE 3010H. Introduction to Telecommunications (Honors). 3 hours.
Not open to students with credit in TELE 3010.
Prerequisite: Permission of Honors.
Global telecommunication systems, the evolution of broadcast technologies, and the production processes and audience research techniques of rapidly converging industries. The course also encompasses the regulatory, legal, and economic mechanisms influencing the marketplace. Class projects will emphasize strategies to affect social change via media channels.

TELE 3110. Writing for Electronic Media. 3 hours.
Prerequisite: Permission of major.
The problems of writing for the telecommunications industry. Introduction to special scripting requirements of radio, television, film, recording, and cable formats. Emphasis will be upon working from the creation of the idea to final script.

TELE 3210. Introduction to Production Basics. 3 hours.
Prerequisite: Permission of major.
Basic methods of pre-production, production, and post-production of radio, television, and electronic field production with additional emphasis on the creative, persuasive, and ethical application of these media in today's society.

TELE 3310. Media Programming and Management. 3 hours.
Prerequisite: TELE 3010 and permission of major.
The methods by which radio and television program schedules are developed, tested, implemented, and revised. Topics include program budgeting and finance, syndication, local origination, automation, ratings, and qualitative program research, program strategies, formats, and adapting radio/television programs for alternative distribution systems.

TELE 3410. Media Research and Theory. 3 hours.
Prerequisite: TELE 3010 and permission of major.
Major contemporary theories and research techniques relevant to the electronic media. Includes quantitative, qualitative, and critical approaches to media studies.

TELE 4250-4250L. Video Production. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: TELE 3210 and permission of department.
The theory and techniques of informational video production. A studio production course with emphasis on video cameras, production switchers, character generators, microphones, audio mixers, lighting instruments and dimmers, basic set construction, lighting design, and program blocking. Extensive in-class production projects.

TELE 4270. Audio Production. 3 hours.
Prerequisite: TELE 3210 and permission of department.
Sound design, editing, and recording. Creative editing, sound layering, multi-track mixing of dialogue, music, and sound effects to achieve a sonic styling for radio, television, or film.

TELE 4290-4290L. Digital Media Production. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: Permission of department.
Production of digital audio and video materials. Topics will include the technology of digitization, compression techniques for digital media, the manipulation of digital content, delivery methods for digital media, applications for digital media.

TELE 4350. Broadcast Management. 3 hours.
Prerequisite: TELE 3310 and permission of department.
Theory and application of management practices in the administration of telecommunication businesses. Cost and revenue management, use of research, rate setting, capital and operations budgeting, personnel management, and program syndication.

TELE 4420. Telecommunications Research. 3 hours.
Prerequisite: TELE 3410 and permission of department.
Major analysis techniques commonly found in telecommunications research, including basic audience research techniques (such as ratings research, audience profiling, concept and program testing) and studies of the impact of production economics. Student participation in laboratory and field studies may be required.

TELE 4450. Emerging Media Technologies. 3 hours.
Prerequisite: TELE 3010.
New and proposed telecommunication technologies, including theoretical perspectives, techniques of analysis, and management strategies. Investigation of the social and psychological factors influencing the adoption and impact of these new technologies.

TELE 4960H. Honors Undergraduate Research. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

TELE 4970H. Honors Undergraduate Research. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

TELE 4980H. Honors Undergraduate Research. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

TELE 4990H. Honors Thesis. 3 hours.
Prerequisite: Senior standing and permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Students in this course meet with their supervising professor as needed to successfully complete assignments and readings.

TELE 5010. Mass Communication Internship. 1-3 hours.
Prerequisite: TELE 3010 and TELE 3210 and permission of department.
Supervised experience in mass communication.

TELE 5170. Advanced Studies in Mass Communication. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Senior standing and permission of department.
Independent study or special project in any area of mass communication. Written proposal outlining the work to be undertaken must be submitted and receive the instructor's approval before registration for the course. Students will be responsible for insuring the funding of their projects. Course may be taken through the University of Georgia Studies Abroad Program in Parma, Italy, and London, England.
Non-traditional format: This course is a directed study and has no lecture/lab hours.

TELE 5250. Electronic Field Production. 3 hours.
Prerequisite: TELE 3110 and TELE 3210 and permission of department.
The creative challenge in shooting film style, involving directional creativity, theory, and application of production techniques from idea through to the complete project. This course requires a project which demonstrates creativity and production techniques.

TELE 5260. Advanced Production. 3 hours.
Prerequisite: (TELE 4250 or TELE 5250) and permission of department.
A capstone course that demonstrates the student's knowledge and abilities in production, with emphasis given to directional creativity, production techniques from the conception of idea through scripting, editing, and sound track for a completed project that demonstrates knowledge in these areas.

TELE 5440. History and Analysis of Electronic Programming. 3 hours.
Radio and television entertainment and informational programs are traced from their roots to the present through socio-cultural, technical, legal, and economic influences.

TELE 5560. Electronic News Gathering Production. 3 hours.
Prerequisite: TELE 3210 and permission of major.
Production of telecommunications for news using portable videotape equipment and both analog linear and digital nonlinear editing equipment. Students will participate in field exercises involving the videotaping and editing of information messages intended for inclusion in television newscasts.

TELE 5570-5570L. Broadcast News Writing and Producing. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: TELE 3210 and permission of major.
The gathering of information and writing of broadcast news copy as well as the processing of that information into radio and television news programs under deadline discipline, including the responsibilities and ethics of the broadcast news reporter.

TELE 5580-5580L. Advanced Television News Reporting. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: TELE 5560 and TELE 5570-5570L and permission of department.
Corequisite: TELE 5590-5590L.
Advanced methodology in the gathering of television news. Students will write, edit, produce, shoot, report, anchor under deadline pressure. Analysis of news sources and problems unique to broadcast journalists is emphasized in this intensive practicum.

TELE 5590-5590L. Advanced Television News Producing. 3 hours. 3 hours lecture and 3 hours lab per week.
Prerequisite: TELE 5560 and TELE 5570-5570L and permission of department.
Corequisite: TELE 5580-5580L.
Advanced methodology in the production of television news. Student will manage an ongoing television news production under deadline pressure. Intensive practicum.

TELE 5990. Seminar in Telecommunication. 3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: Permission of department.
A seminar designed to synthesize and integrate many of the theoretical and practical approaches of the study of mass communication, giving opportunity through a variable topics seminar to analyze processes and effects of mass communication and to acquire specialized knowledge of specific mass media modes of presentation and production.

(TXMI) Textiles, Merchandising and Interiors

College of Family and Consumer Sciences, Department of Textiles, Merchandising and Interiors

TXMI 2000. Introduction to Family and Consumer Sciences. 1 hour.
The specialties and professions comprising the fields in family and consumer sciences. Systems perspective is emphasized in examining quality of life issues. Discussions include the personal, professional, and technical elements involved in career development.

TXMI 2100. Textiles for Consumers. 3 hours.
Textile study with emphasis on selection, use, performance, and care of textile products in the consumer's environment.

TXMI 2520. Principles of Creative Clothing. 3 hours.
Application of art principles to clothing selection. Basic principles of clothing construction related to fabric, fit, and design of the garment.

TXMI 3010. Directed Research. 1-12 hours.
Repeatable for maximum 12 hours credit.
Prerequisite: Permission of department.
Designed for the senior major to permit independent study and research.
Non-traditional format: Independent study under the direction of a faculty member.

TXMI 3210. Fundamentals of Fashion Merchandising. 3 hours.
Fashion with an emphasis on various product categories. Innovative processes in the fashion business. Concentration on fashion innovation, role of designers and other influentials. Domestic and international fashion centers, trends in fashion, and the power of fashion in society.

TXMI 3240. Retail Planning and Buying. 3 hours.
Prerequisite: ACCT 2101.
Accounting concepts in relation to specific applications in merchandising; use of computers in merchandising.

TXMI 3350. Residential Interiors and Furnishings. 3 hours.
Furnishing the home for contemporary living. Students apply design principles in planning furnishings for the home.

TXMI 3360. Residential Design. 3 hours.
Prerequisite: Sophomore standing or permission of department.
Design communication by two-dimensional drawings of floor plans, sections, elevations, and axonometrics in traditional and contemporary residences.

TXMI 3380. Interior Perspective and Media. 3 hours.
Prerequisite: TXMI 3360.
Methods for design communication through manipulation of two- and three-dimensional drawings.

TXMI 3500. Textiles. 3 hours.
Prerequisite: (CHEM 1110 and CHEM 1110L) or (CHEM 1211 and CHEM 1211L).
Corequisite: TXMI 3500L.
Production and properties of textile fibers, yarns, and fabrics; study of dyeing and finishing processes.

TXMI 3500L. Textiles Laboratory. 1 hour. 2 hours lab per week.
Prerequisite: (CHEM 1110 and CHEM 1110L) or (CHEM 1211 and CHEM 1211L).
Corequisite: TXMI 3500.
Laboratory experiments on fibers, yarns, fabrics, dyeing, and finishing.

TXMI 3520. Textile Testing. 3 hours.
Prerequisite: (TXMI 3500 and TXMI 3500L) and (STAT 2000 or STAT 2210 or MSIT 3000).
Basic textile testing for end-use performance.

TXMI 3530. Apparel Quality Analysis. 3 hours.
Structural approach to evaluating apparel quality. Identification of components in apparel structures.
Non-traditional format: Field trips.

TXMI 3550. Environment, Science, and Technology. 3 hours.
Application of chemical and scientific principles to environmental problems. Chemical processes in pollution and environmental degradation; basics of environmental legislation and regulations; technological developments and strategies in waste reduction and pollution prevention; effects of pollutants and hazardous substances; current environmental issues.

TXMI 3570. Color Science. 3 hours.
Basic color theory; analysis of the use of color and color communication, with applications to the areas of apparel, interiors, textiles, and merchandising.

TXMI 4100/6100. Advanced Textiles. 3 hours.
Prerequisite: (TXMI 3500 and TXMI 3500L) or permission of department.
Fibers and finishes; emphasis on man-made fibers, new fiber, and finish developments and technology.

TXMI 4110/6110. Textile Dyeing. 3 hours.
Prerequisite: TXMI 3500 and TXMI 3500L and permission of department.
Textile dyeing processes with emphasis on fiber-dye association. Analysis of dyeing techniques and properties of dyes and dyed materials.

TXMI 4120/6120. Product Standards and Quality Analysis. 3 hours.
Prerequisite: (STAT 2000 and TXMI 3520) or permission of department.
Developing, maintaining, and assessing product standards from the initial design process to end uses of textile and apparel products. Quality assurance and certification programs; governmental regulations; statistical analysis and control of benefits offered through standards.

TXMI 4130/6130. Chemical and Instrumental Analysis of Polymers and Textiles. 3 hours.
Prerequisite: TXMI 3520 and TXMI 4100/6100 and CHEM 2211 and CHEM 2211L.
Theory and application of instrumental analysis to polymers, fibers, fabrics, dyes, and finishes.

TXMI 4140/6140. Textile Finishing Processes. 3 hours.
Prerequisite: TXMI 3520.
Theory, application, evaluation, and identification of textile finishes and textile auxiliary processes. Examination of the role of finishing and types of finishes used in manufacturing fibers, yarns, and fabrics.

TXMI 4150/6150. Nonwovens Science and Technology. 3 hours.
Prerequisite: TXMI 4100/6100 and permission of department.
Manufacture and conversion of nonwoven webs with examination of interrelationships involving raw materials, bonding systems, manufacturing processes, product properties, and end uses.

TXMI 4220. Fashion Image Development and Promotion. 3 hours.
Techniques of image development in the merchandising of fashion goods. The development of displays and promotions appropriate to various store images.

TXMI 4230/6230. Clothing and Human Behavior. 3 hours.
Prerequisite: PSYC 1101 or SOCI 1101.
The study of clothing with particular emphasis on psychological, sociological, and economic aspects of clothing.

TXMI(DRAM) 4270/6270. History of Costume: Antiquity to Nineteenth Century. 3 hours.
Prerequisite: Permission of department.
Interrelationships of costume and social, cultural, political, and economic environments from antiquity to the nineteenth century.

TXMI 4290/6290. History of Costume from the Nineteenth Century to Present. 3 hours.
Prerequisite: (TXMI 3500 and TXMI 3500L) or permission of department.
Interrelationship of costume and social, cultural, political, and economic environments from the nineteenth century to present day.

TXMI 4330/6330. American Interiors and Furnishings. 3 hours.
American interior design and furnishings from the seventeenth to the twentieth centuries. Identification of styles as well as social, cultural, and historic influences.

TXMI 4340/6340. Historic Interior Materials. 3 hours.
Prerequisite: Permission of department.
Ceiling, wall, and floor coverings, window treatments, upholstery, and lighting in historic American interior design, with emphasis on analysis and selection.

TXMI 4350/6350. Historical Homes and Furnishings. 3 hours.
Prerequisite: [TXMI 3350 and ARST 2000]or permission of department.
The architecture, interiors, and furnishings in the western world from the ancient Egyptian era through 1850.

TXMI 4360/6360. Decorative Accessories for the Home. 3 hours.
Prerequisite: TXMI 3350 or permission of department.
Historical and cultural development of accessories used in the home including ceramics, metals, and textiles. Design and characteristics of materials in these accessories will be covered.

TXMI 4370/6370. Contemporary Homes and Furnishings. 3 hours.
Prerequisite: (TXMI 3350 and ARST 2000) or permission of department.
Contemporary developments in architecture, interiors, and furniture from 1850 to the present day.

TXMI 4380/6380. Interior Fabrics and Materials: Specifications and Estimations. 3 hours.
Prerequisite: (TXMI 3520 and senior standing) or permission of department.
Construction, fibers, and finishes for fabrics with emphasis on quality, durability, and utilization of current materials for soft floor coverings, window treatments, and upholstery. Estimations and specifications.

TXMI 4520/6520. Apparel and Textile Economics. 3 hours.
Prerequisite: [TXMI 3500 and TXMI 3500L and (ECON 2106 or ECON 2105)] or permission of department.
Organization and functions of apparel and textile industries. Factors related to production, distribution, and consumption of apparel and household textiles.

TXMI 4530/6530. International Textiles and Apparel: Europe. 3 hours.
Prerequisite: TXMI 3500 and TXMI 3500L.
Textile and apparel production and distribution in relation to the culture, politics, and policies of major textile and apparel industries in Europe. Emphasis placed on impact of global issues on marketability and availability of textile and apparel products.

TXMI 4540/6540. International Textiles and Apparel: Asia. 3 hours.
Prerequisite: TXMI 3500 and TXMI 3500L.
Textile and apparel production and distribution in relation to the culture, politics, and policies of major textile and apparel industries in Asia. Emphasis placed on impact of global issues on marketability and availability of textile and apparel products.

TXMI 4550. International Textiles and Apparel: Americas. 3 hours.
Prerequisite: TXMI 3500 and TXMI 3500L.
Textile and apparel production and distribution in relation to the culture, politics, and policies of Canada, Latin America, and the Caribbean. Emphasis on global issues impacting on marketability and availability of textile and apparel products.

TXMI 4580/6580. History of Textiles in Europe and America. 3 hours.
Prerequisite: Permission of department.
Textiles and the textile industry in prehistoric, ancient, medieval, and modern eras, with special emphasis on Western European and American textiles.

TXMI 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

TXMI 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

TXMI 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

TXMI 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field.
Non-traditional format: Honors thesis.

TXMI 5240/7240. Retailing Apparel and Textiles. 3 hours.
Retailing, retail organizational structures, merchandising, and organization of market resources in apparel and textiles. Emphasizes concepts applicable to the apparel and textile industry.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

TXMI 5310/7310. Residential Interiors and Economic Resources. 3 hours.
Prerequisite: [TXMI 3380 and TXMI 4380/6380] or permission of department.
Residential space planning and selection of fabrics, finishes, and furnishings using specified amounts of economic resources.

TXMI 5320/7320. Residential Design Practices. 3 hours.
Prerequisite: Senior standing and permission of department.
Relationships between the designer, wholesaler, and retailer in the home furnishing industry. Designer and client relationships with emphasis on retailing practices and economic resources in the residential design firm.

TXMI 5330. Computer-Aided Residential Design. 3 hours.
Prerequisite: TXMI 3360 and junior standing.
Drawing tools and editing in the CAD program. Creation, modification, storage, retrieval, and management of AutoCAD drawings.

TXMI 5710/7710. Study Tour in Textiles, Merchandising and Interiors. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
An on-location study of clothing, textiles, fashion merchandising, and residential interiors and furnishings. Includes lectures by recognized leaders in the fields; meetings with designers, manufacturers, merchants and field trips to designers' showrooms or studios, manufacturing plants, distribution centers, retail stores, and museums.
Non-traditional format: Lecture, tour, and other activities for the length of the program.

TXMI 5900. Internship Orientation. 1 hour.
Internship orientation for Fashion Merchandising majors.

TXMI 5910. Textiles, Merchandising and Interiors Internship. 3-9 hours.
Prerequisite: Permission of department.
Supervised work experience in textiles, clothing, interiors, and furnishings in a business firm off campus.
Non-traditional format: Internship.

(UNIV) University Orientation

Division of Academic Assistance

UNIV 1101. Topics in Academic Assistance. 1-3 hours. Repeatable for maximum 9 hours credit.
Opportunity for students throughout the University to study significant topics in a particular area on a non-recurring basis, to address topics needed only periodically by a select group, and/or to consider emerging topics on a pilot basis.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1102. Learning to Learn. 3 hours.
Prerequisite: Freshman or sophomore standing.
Designed for freshmen and sophomores. Focuses on learning strategies that lead to success in college, including studying in a variety of disciplines, note taking skills, critical reading, and test preparation strategies.

UNIV 1103. Strategies for Academic Success. 2 hours.
Not open to students with credit in UNIV 1113 or 1118.
Provides students with a better understanding of their personal abilities, interests, and competencies and to ascertain how these aspects of one's self enhance or hinder academic performance. Students will develop effective plans to overcome barriers to academic success.

UNIV 1104. Topics in Problem Solving. 2-3 hours.
Problem solving, critical and analytical thinking skills, logical thought development, probability, spacial relationships.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1105. Improving Grammar, Usage, and Style. 3 hours.
Reviews conventions of grammar, usage, punctuation, and sentence structure in order to help students edit their papers more effectively and to write in a clearer style.

UNIV 1106. Basic Report Writing for College and Beyond. 3 hours.
Not open to students with credit in ENGL 3590.
Prerequisite: ENGL 1101.
Practice in composing short technical and business documents. Attention to the essentials of effective writing, including audience analysis; concise, readable style; and correct grammar and mechanics.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1107. Enhancing Thinking Skills. 2-3 hours.
To assist students in developing higher level thinking skills. Students will be active participants in the class, engaging in creative problem solving, small group discussions and response writing. A variety of media will be used to elicit student ideas and opinions.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1108. Preparation for Statistics-Based Courses. 3 hours.
The algebra of statistics and basic statistical concepts. These concepts will be used in analyzing and interpreting real data.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1109. Resources for Research. 3 hours.
Students investigate their selected topic through library resources (reference books, GALIN, GALILEO, and hardcopy indexes), the World Wide Web, and a personal research project (interview, survey, or observation). Students critically assess both the research tools and the information they find, as shown in oral and written reports.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1110. Preparation for Pre-Calculus. 3 hours.
A complete review of algebra and a brief review of trigonometry to prepare the student for the credit pre-calculus course. Topics include factoring; solving equations and inequalities; rational, radical, exponential, and logarithmic functions; graphing; and basic trigonometry.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1111. Text Comprehension and Vocabulary Improvement. 2 hours.
Strategies to better comprehend and remember text information; emphasizes the processes of identifying key information, understanding organizational patterns, monitoring, higher-level thinking, and fixing-up comprehension difficulties; vocabulary and the role it plays in text comprehension.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1112. Improving Reading Rate. 2 hours.
Strategies to improve reading rate and fluency; strategies include prereading, eye movements, phrasing, and computerized pacing activities; students will learn how to transfer rate improvement strategies to their own text reading.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1113. University Success for Freshmen. 2-3 hours.
Prerequisite: Freshman standing.
To assist freshmen in adapting to the University. Course topics include the purpose of higher education, time and stress management, learning styles, goals and objectives, the core curriculum, career exploration, diversity issues, and critical thinking and problem solving.

UNIV 1114. Strategies for Success for Nontraditional Students. 2-3 hours.
Not open to students with credit in UNIV 1103.
An opportunity for nontraditional-age students to further develop academic, psychological, and social life skills needed for achieving success in a university setting. Topics related to critical thinking, learning styles, diversity, time management, communication, and motivation will be taught using self-assessments, lectures, discussions, and experiential exercises.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1115. Introduction to Academic Writing. 3 hours.
Reviews essentials of students' understanding and practicing rhetorical features of clear, affective academic prose.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1116. Study Strategies Adjunct. 1 hour.
Repeatable for maximum 3 hours credit.
Designed to assist students in undergraduate core courses by providing weekly seminars focusing on study strategies for specific courses or areas such as history or the sciences; students will learn skills such

as notetaking, text reading, and test preparation strategies.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1117. Basic Composition for Multilingual Writers. 3 hours.
Fundamentals of English grammar, vocabulary development, and organization and development of expository and persuasive essays for non-native undergraduates. Emphasis on problems multilingual students typically experience with proofreading, revision, and writing for an American audience. Class will be small and students will receive much individualized help.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 1118. University Studies Academic Success. 2 hours.
To assist first semester University Studies traditional and nontraditional freshmen in adapting to the University. Course topics include the purpose of higher education, time and stress management, learning styles, goals and objectives, the core curriculum, career exploration, diversity issues, and critical thinking and problem solving.

UNIV 1120. Online@UGA: Computer/Information Literacy. 1 hour.
Not open to students with credit in CSCI 1100-1100L.
An introduction to computing at the University of Georgia for new students. Primary elements of the University of Georgia computing environment, including campus network resources, e-mail, computer ethics and security, Web searches and evaluation of content, and introduction to software commonly utilized for course work.

UNIV 2201. Introduction to the Research Paper. 3 hours.
Prerequisite: ENGL 1102.
Basics of writing the academic research paper: using resources of the University libraries, gathering sources, taking notes, avoiding plagiarism, documenting sources, organizing the paper, and creating a voice and style suitable to audience and purpose.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

UNIV 2202. Academic Writing for Multilingual Students. 3 hours.
Offers grammar review, vocabulary development, and writing instruction for multilingual students from any discipline who need to further develop their writing skills for class papers, theses, dissertations, or for publication. Academic style guidelines to the student's field of study will be used.
Non-traditional format: This course carries institutional credit and will not count toward graduation.

(VETM) Veterinary Medicine

College of Veterinary Medicine

VETM 4960H. Directed Readings and/or Projects (Honors). 3-5 hours. Repeatable for maximum 20 hours credit.
Prerequisite: BCMB(BIOL)(CHEM) 3100 and permission of department and permission of Honors.
A directed study in one of the basic sciences in the College of Veterinary Medicine. Includes library and laboratory learning experiences not otherwise available to undergraduate students.
Non-traditional format: Course is taught in a research format. Hours per week vary depending on stage of project.

VETM 4970H. Directed Readings and/or Projects (Honors). 3-5 hours. Repeatable for maximum 20 hours credit.
Prerequisite: Permission of department and permission of Honors.
A directed study in one of the basic sciences in the College of Veterinary Medicine. Includes library and laboratory learning experiences not otherwise available to undergraduate students.
Non-traditional format: Course is taught in a research format. Hours per week vary depending on stage of project.

VETM 4990H. Honors Thesis. 3.3 hours.
Prerequisite: Permission of Honors.
Guidance by a faculty member in writing an honors thesis.
Non-traditional format: Course is taught in a research format. Hours per week vary depending on stage of project.

(VIET) Vietnamese

College of Arts and Sciences, Department of Comparative Literature

VIET 1001. Elementary Vietnamese. 3 hours.
Develops all four language skills: listening, speaking, reading, and writing. Introduces the phonetic system and the Vietnamese script. Fifteen dialogues contain situation-based conversations which introduce basic vocabulary and grammar. Each lesson contains several culture notes about the country and its customs.

VIET 1002. Elementary Vietnamese II. 3 hours.
Prerequisite: VIET 1001.
A continuation of Elementary Vietnamese. Develops all four language skills: listening, speaking, reading, and writing. Introduces the phonetic system and the Vietnamese script. Another fifteen dialogues contain situation-based conversations

which introduce basic vocabulary and grammar. Each lesson contains several culture notes about the country and its customs.

(VPHY) Physiology and Pharmacology

College of Veterinary Medicine, Department of Physiology and Pharmacology

VPHY 3100. Elements of Physiology. 3.3 hours.
The mammalian body as a single functional unit; studies include nervous, muscular, respiratory, circulatory, digestive, renal, endocrine, and reproductive systems.

(WMST) Women's Studies

College of Arts and Sciences

WMST 1110-1110D. Multicultural Perspectives on Women in the United States. 3 hours. 2 hours lecture and 1 hour discussion per week.
Not open to students with credit in WMST 1110H.
Experiences of women in selected racial and ethnic communities: Latinas/Chicanas, African Americans, Native Americans, Asian Americans, and other women in contemporary United States.

WMST 1110H. Multicultural Perspectives on Women in the United States (Honors). 3 hours. 2 hours lecture and 1 hour lab per week.
Not open to students with credit in WMST 1110.
Prerequisite: Permission of Honors.
Experiences of women in selected racial and ethnic communities: Latinas/Chicanas, African Americans, Native Americans, Asian Americans, and other women in contemporary United States.

WMST 2010. Introduction to Women's Studies. 3 hours.
Not open to students with credit in WMST 2010H.
The study of women of diverse racial, ethnic, and class backgrounds. Topics include contemporary concerns within women's studies: labor markets, health, reproduction, socialization, language, media representations, law, and public policy.
Non-traditional format: This course is also offered through University System of Georgia Independent Study (USGIS).

WMST 2010H. Introduction to Women's Studies (Honors). 3 hours.
Not open to students with credit in WMST 2010.
Prerequisite: Permission of Honors.
The study of women of diverse racial, ethnic, and class backgrounds. Topics include contemporary concerns within women's studies: labor markets, health, reproduction, socialization, language, media representations, law, and public policy.

WMST(CSCI) 2040-2040L. Gender and Computing: Information Systems Design. 3 hours. 2 hours lecture and 2 hours lab per week.
Computers and the Internet as tools of knowledge to empower the user. Issues raised will be from gender and technology literature. Laboratory sessions will provide hands-on experience with information systems design and computer programming culminating in the creation of a community-based information system.

WMST 3100. Lesbian and Gay Studies. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Investigation of same-sex desire, heterosexuality, homosexuality, and the regulation of sexual identities across different racial/ethnic and class/regional communities. Focusing on Native American, African American, Latino, Asian American, and international studies, with texts from law, anthropology, history, film, fiction, and theory.

WMST 3110. Gender, Race, Class, Sexuality. 3 hours.
Prerequisite: Junior or senior standing or permission of department.
Interdiciplinary examination of social issues of race, class, ethnicity, and sexuality as they contribute to the lives and identity formation of diverse women in the United States. Special attention paid to African American, Asian American, Latin American, and Native American women.

WMST 3250. Issues in Women's Studies. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: Junior or senior standing or permission of department.
Topics of scholarly interest on women and gender from interdisciplinary perspectives. Assumes no prior background in women's studies.

WMST 4010/6010. Introduction to Feminist Theories. 3 hours.
Prerequisite or corequisite: Undergraduate level only: WMST 1110-1110D or WMST 1110H or WMST 2010 or WMST 2010H or permission of department.
The historical origins, philosophical assumptions, and political implications of contemporary feminist theories, including conservative, liberal, radical and ecological feminist theories.

WMST 4011. Understanding Research in Women's Studies. 3 hours.
Prerequisite: WMST 2010 or permission of department.
Exploration of the assumptions and procedures of

interdisciplinary research in the humanities and social sciences with specific attention to the purposes and processes of generating knowledge about women, gender, and feminism. Investigation and comparison of various qualitative and quantitative approaches, including narratives, ethnographies, and surveys.

WMST 4020. Seminar in Advanced Feminist Studies. 1-3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: WMST 4010/6010 or permission of department.
Topics of scholarly interest in advanced feminist theory.

WMST 4050/6050. Gender and the Political Economy of Developoment. 3 hours.
Not open to students with credit in WMST 7050.
Prerequisite: WMST 4010/6010 or permission of department.
Conceptual and methodological tools of analysis to gender and development issues in Third World societies of Africa, Asia, Latin America, and the Caribbean. Use of case studies to explore similarities in gender-related experiences and strategies of resistance and empowerment.

WMST 4120/6120. Biology and Politics of Women's Reproduction. 3 hours.
Prerequisite: Undergraduate level only: (WMST 4010/6010 and BIOL 1103 and BIOL 1103L) or permission of department.
Women's reproductive life cycles from the perspective of evolutionary biology and the political theory of radical feminism. Topics include puberty, sexual cycling, menarche, pregnancy, childbirth, and menopause. Feminist critiques of science are explored.

WMST 4130/6130. Border Women: Postcolonialism, Gender, and Identity. 3 hours.
Prerequisite: WMST 4010/6010 or permission of department.
Gender construction and identity formation in multicultural, postcolonial societies using theories from the social sciences and humanities. Experiences of women of color and Third World women from, for example, the Indian sub-continent, Hawaii, and Chicana United States. Topics include processes of marginalization, strategies of resistance, and transformation of oppressive power relations.

WMST 4250/6250. Special Topics in Women's Studies. 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: WMST 4010/6010 or permission of department.
Ongoing and current topics of scholarly interest in women's studies.

WMST 4250H. Special Topics in Women's Studies (Honors). 3 hours. Repeatable for maximum 12 hours credit.
Prerequisite: (WMST 4010/6010 or permission of department) and permission of Honors.
Ongoing and current topics of scholarly interest in women's studies.

WMST 4900. Senior Seminar: Integration of Theory and Practice. 3 hours.
Prerequisite: (WMST 4010/6010 and senior standing) or permission of department.
Advanced study of issues concerning women of diverse backgrounds, including women's health, employment, reproduction, sexuality, marriage and family, media representation, and socialization. Emphasis is on interdisciplinary perspectives and critical thinking along with application of knowledge and/or advocacy.

WMST 4950. Directed Studies in Women's Studies. 1-3 hours. Repeatable for maximum 6 hours credit.
Prerequisite: WMST 4010/6010 and permission of department.
Readings and independent research closely supervised by a faculty member on a specific interdisciplinary topic in women's studies.
Non-traditional format: Directed study.

WMST 4960H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

WMST 4970H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

WMST 4980H. Directed Reading and/or Projects (Honors). 3 hours.
Prerequisite: Permission of Honors.
Individual study, reading, or projects under the direction of a project director.
Non-traditional format: Directed study.

WMST 4990H. Honors Thesis. 3 hours.
Prerequisite: Permission of Honors.
Individual research in the major field or in a closely related field.
Non-traditional format: Directed study.

WMST 5000. Internship in Women's Studies. 3 hours.
Prerequisite: WMST 4010/6010 and permission of department.

Supervised professional practice in an organization, agency, or business where women's leadership skills may be developed.
Non-traditional format: Internship.

(YORB) Yoruba

College of Arts and Sciences, Department of Comparative Literature

YORB 1010. Elementary Yoruba I. 4 hours.
Foundation in spoken and written Yoruba. Focus on oral and aural skills, basic grammar. Additional laboratory work required. Introduction to Yoruban culture.

YORB(AFAM) 1020. Elementary Yoruba II. 4 hours.
Prerequisite: YORB 1010.
A continuation of Elementary Yoruba I. Increased focus on grammar and culture, reading and conversation.

YORB(AFAM) 2010. Intermediate Yoruba I. 3 hours.
Prerequisite: YORB(AFAM) 1020.
Focus on developing fluency in spoken and written Yoruba. Oral work geared towards building effective communication in day-to-day situations and functional tasks. Readings in authentic Yoruban texts of increasing complexity. Advanced cultural discussion.

YORB 2020. Intermediate Yoruba II. 3 hours.
Prerequisite: YORB(AFAM) 2010.
A continuation of Intermediate Yoruba I. Introduction to additional literary texts, including poetry, newspapers, magazines.

YORB 3010. Advanced Yoruba I. 3 hours.
Prerequisite: YORB 2020.
Designed to prepare students to travel to Nigeria and for research using authentic research materials. Study of geography and of political and economic structures of Nigeria and West Africa. Focus on reading Yoruban texts.

YORB(AFAM) 3020. Advanced Yoruba II. 3 hours.
Prerequisite: YORB 3010.
Advanced readings, novels, thematic texts, and rhetoric. Focus on developing comprehension of textual materials. Introduction to scientific and other specialized materials.

(YORB)(AFAM)SWAH 3030. Introduction to African Languages, Cultures, and Folklore. 3 hours.
The languages, cultures, folklore, orature, and literature of East Africa and West Africa. While texts will be available in English, students with proficiency in Swahili or Yoruba will examine the literature in its original language.

YORB 3990. Directed Study in Yoruban Language and Literature. 1-3 hours. Repeatable for maximum 3 hours credit.
Prerequisite: Permission of department.
Independent study and research in Yoruban language and literature under the direction of individual faculty. Focus is on reading and analysis of Yoruban literary texts (including works in translation from Yoruba-speaking communities in Africa and the Diaspora).
Non-traditional format: Directed study.

(ZULU) Zulu

College of Arts and Sciences, Department of Comparative Literature

ZULU(AFAM) 1001. Elementary Zulu I. 4 hours.
Fundamentals of the Zulu language and culture which has spread to cover communities in South Africa as well as outside of South African borders to the Southern parts of Zimbabwe, and parts of Botswana, Lesotho, and Swaziland. Emphasis will be placed on grammar, pronunciation, reading, writing, and conversational skills. Course may be taken through UGA Studies Abroad program in African Studies, Sociology, Language Ed..

ZULU 1002. Elementary Zulu II. 4 hours.
Prerequisite: ZULU(AFAM) 1001.
The course is intended to build cultural knowledge, structural and conversational knowledge acquired in Elementary Zulu I. Intensive training and practice in speaking, listening, reading/comprehension, and writing in Zulu. There will be continued emphasis on speaking and understanding the culture of the Zulu speaking communities. Course may be taken through UGA Studies Abroad program in African Studies Program.

ZULU(AFAM) 2001. Intermediate Zulu I. 3 hours.
Prerequisite: ZULU 1002.
Intensive oral and written training in Zulu, with emphasis on fluent conversation skills and comprehension of literature written in Zulu. The structure of the language will be taught directly and indirectly through written texts and oral assignments, tests, midterm and final exams, and computer-assisted exercises, tests.

ZULU(AFAM) 2002. Intermediate Zulu II. 3 hours.
Prerequisite: ZULU(AFAM) 2001.
A continuation of Intermediate Zulu I. The course will enhance the student's knowledge of Zulu grammar and culture, build on the vocabulary, and

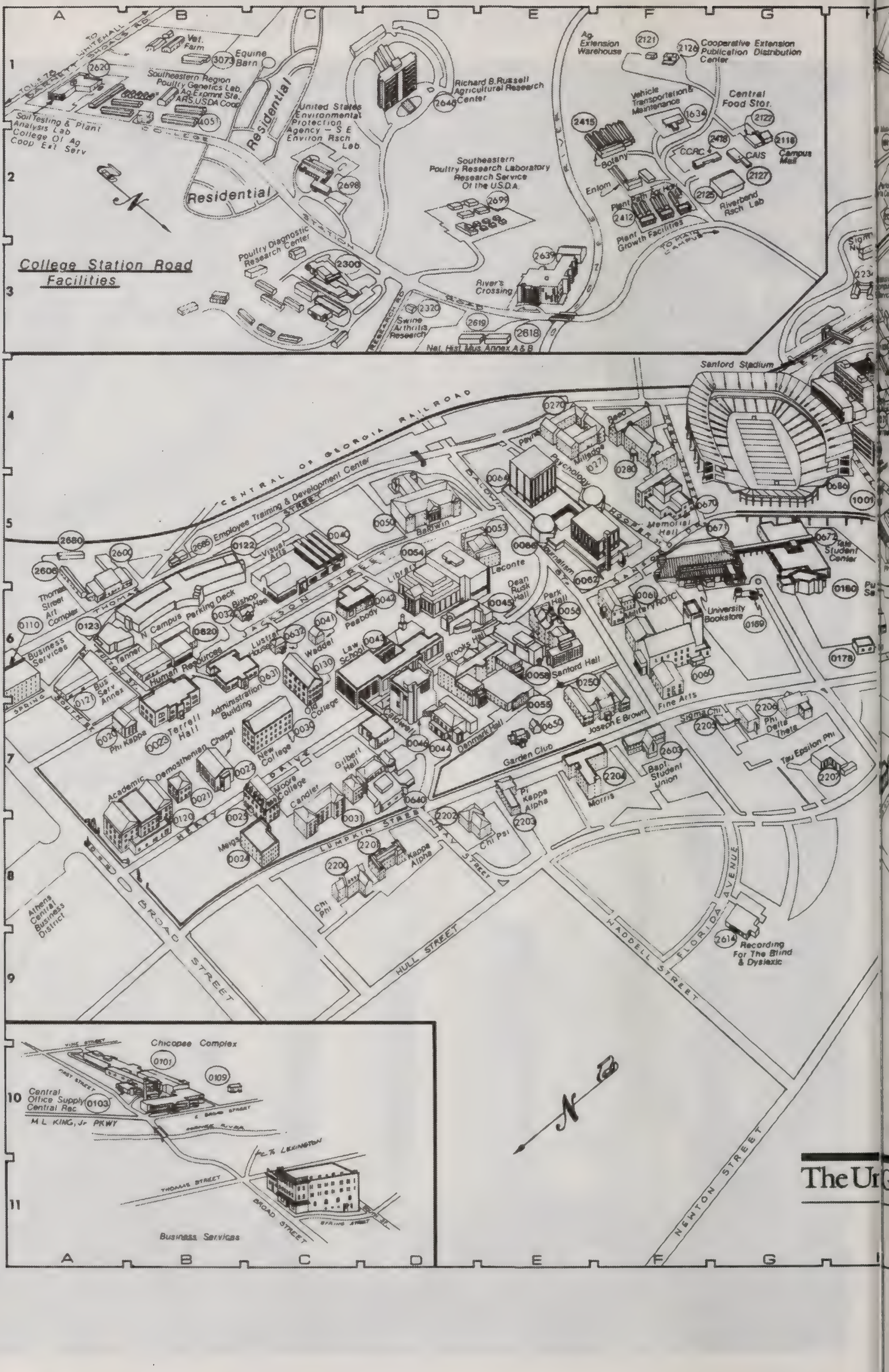
intensive knowledge of elementary literature written in the language. It will also help students to understand the interrelationship among language structure, culture, and history of the Zulu speaking people.

ZULU(AFAM) 3001. Advanced Zulu I. 3 hours.
Prerequisite: ZULU(AFAM) 2002.
The course will prepare students to work with advanced authentic Zulu materials in literary writings. The focus will be on critical reading and the interpretation of standard and colloquial Zulu.

ZULU(AFAM) 3002. Advanced Zulu II. 3 hours.
Prerequisite: ZULU(AFAM) 3001.
Development of the already acquired skills in the language and strengthening of the students' proficiency in reading, writing, and critiquing literary texts written in the language. There will be extensive oral practice, reading and comprehension exercises in addition to assigned literary texts from a selected list of literature (fiction and non-fiction) from South Africa.

ZULU 3990. Directed Study in Zulu Language and Literature. 3 hours. Repeatable for maximum 9 hours credit.
Prerequisite: Permission of department.
Independent study and research under the direction of individual faculty members. Course may be taken through UGA Studies Abroad program in African Studies Program.
Non-traditional format: Directed study.

Campus Map and Index


College Station Road Facilities
A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11
Vet. Farm
3073
Equine Barn
2620
Southeastern Region Poultry Genetics Lab. Ag Expmnt Ste. ARS,USDA Coop
4051
Soil Testing & Plant Analysis Lab College Of Ag Coop Ext Serv
Residential
Residential
United States Environmental Protection Agency – S E Environ Rsch Lab
2698
Richard B. Russell Agricultural Research Center
2646
Southeastern Poultry Research Laboratory Research Service Of the U.S.D.A.
2699
Poultry Diagnostic Research Center
2300
Station
Road
Swine Arthritis Research
2320
2619
2818
Nat. Hist. Mus. Annex A & B
River's Crossing
2639
Ag Extension Warehouse
2121
2126
Cooperative Extension Publication Distribution Center
Vehicle Transportation & Maintenance
1634
Central Food Stor.
2122
2118
Campus Mail
2415
Botany
2416
CCRC
CAIS
Entom
2127
2125
Riverbend Rsch Lab
2412
Plant Path
Plant Growth Facilities
To Main Campus
River
Sanford Stadium
Central of Georgia Railroad
Employee Training & Development Center
0270
Payne
Reed
Milledge
0271
0280
Psychology
0064
0050
Baldwin
0053
0040
0054
Library
0086
Journalism
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Leconte
Dean Rusk Hall
0045
Park Hall
0056
Memorial Hall
0670
0671
0672
Tate Student Center
0680
1001
0160
Military ROTC
0061
University Bookstore
0189
2680
2685
2600
2606
Thomas Street Art Complex
0122
Visual Arts
N Campus Parking Deck
0032
Bishop Hse
0042
Peabody
0041
Waddel
0110
Business Services
0123
Tanner
0820
Human Resources
Lustrat House
0632
0631
Administration Building
0130
Old College
Law School
0043
Brooks Hall
0058
Sanford Hall
0250
0060
Fine Arts
0121
Bus Serv Annex
0026
Phi Kappa
0023
Terrell Hall
0030
New College
Caldwell
0046
0044
Denmark Hall
0055
0650
Joseph E Brown
Garden Club
2209
Sigma Chi
2206
Phi Delta Theta
2207
Tau Epsilon Phi
0178
2603
Bapt Student Union
2204
Morris
Pi Kappa Alpha
2203
Chi Psi
2202
Academic
Demosthenian
Chapel
0022
0021
0120
0025
Moore College
Candler
Gilbert Hall
0031
0640
Meigs
0024
2201
Kappa Alpha
2200
Chi Phi
Jackson Street
Thomas
Fulton St
Spring
South St
Herty Drive
Lumpkin Street
Baxter
Hooper St
Sanford
Broad Street
Hull Street
Waddell Street
Florida Avenue
Newton Street
Athens Central Business District
2614
Recording For The Blind & Dyslexic
N
Chicopee Complex
0101
0109
Central Office Supply Central Rec
0103
M L King, Jr PKWY
Vine Street
First Street
E Broad Street
Oconee River
Rt. To Lexington
Thomas Street
Broad Street
Spring Street
Business Services
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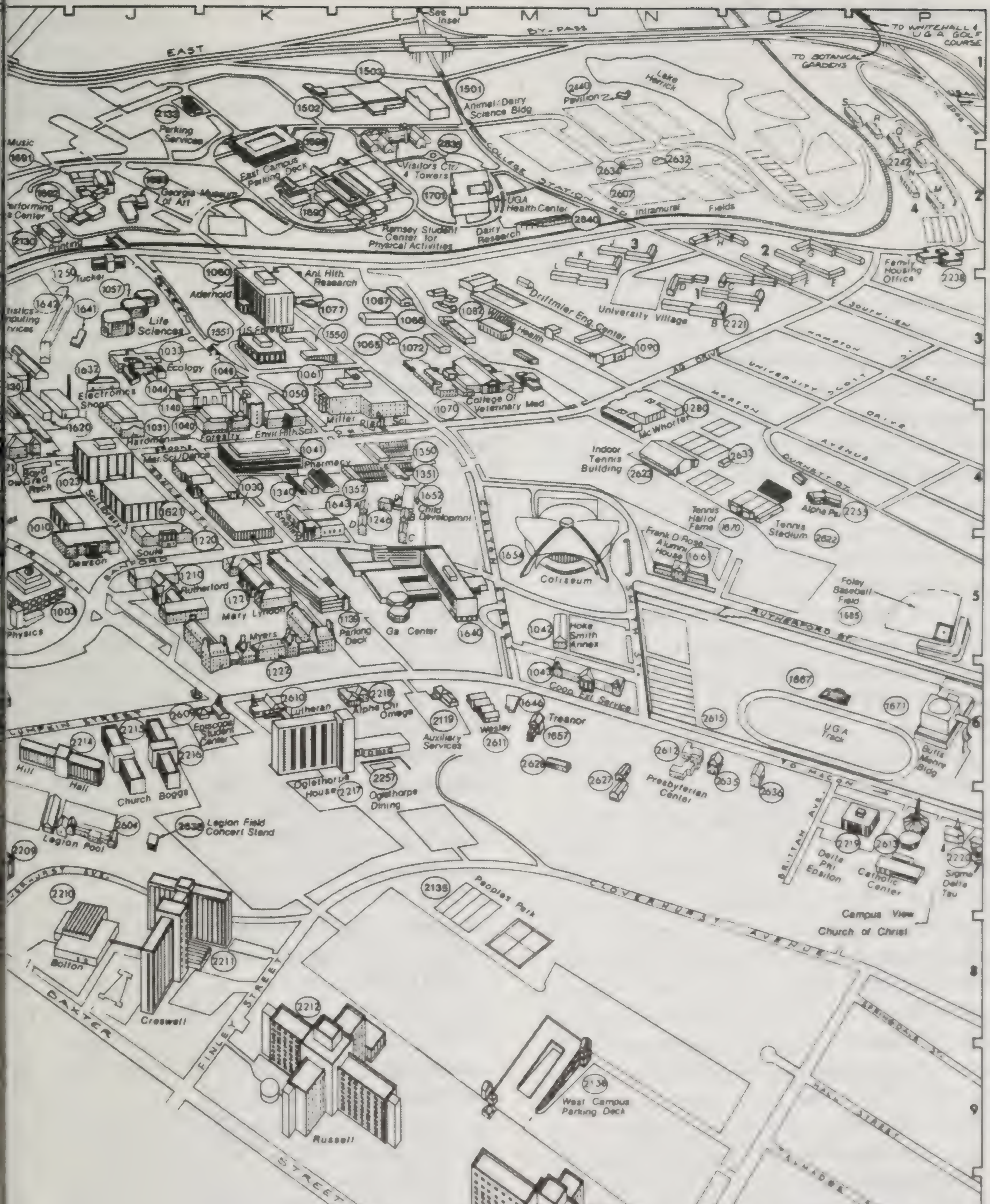

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See Inset
East
By-Pass
To Whitehall & UGA Golf Course
To Botanical Gardens
Lake Herrick
Pavilion
Animal-Dairy Science Bldg
Parking Services
East Campus Parking Deck
Georgia Museum of Art
Visitors Ctr. & Towers
UGA Health Center
Ramsey Student Center for Physical Activities
Dairy Research
College Station Rd.
Intramural Fields
Music
Performing Arts Center
Printing
Tucker
Aderhold
Ani. Hlth. Research
Life Sciences
US Forestry
Ecology
Electronics Shops
Hardman
Forestry
Envir. Hlth. Sci.
Miller Plant Sci.
Mar. Sci./Dance
Pharmacy
Child Development
College Of Veterinary Med
Driftmier Eng. Center
University Village
Family Housing Office
South Lumpkin
Hampton
University Court
Morton Drive
Avenue
Durnett St.
McWhorter
Indoor Tennis Building
Tennis Hall of Fame
Tennis Stadium
Alpha Psi
Frank D. Rose Alumni House
Coliseum
Foley Baseball Field
Rutherford St.
Sci. Library
Dawson
Soule
Sanford
Rutherford
Mary Lyndon
Myers
Parking Deck
Ga. Center
Hoke Smith Annex
Coop. Ext. Service
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Lumpkin Street
Episcopal Student Center
Lutheran
Alpha Chi Omega
Auxiliary Services
Wesley
Treanor
UGA Track
Butts Mehre Bldg
Hill
Hall
Church
Boggs
Oglethorpe House
Oglethorpe Dining
Legion Field Concert Stand
Legion Pool
Presbyterian Center
To Macon
Brittain Ave.
Delta Phi Epsilon
Catholic Center
Sigma Delta Tau
Campus View Church of Christ
Cloverhurst Avenue
Peoples Park
Bolton
Creswell
Baxter
Finley Street
Russell
West Campus Parking Deck
Street
Brumby
Church Street
Springdale St.
Hall Street
Talmadge Street
Peabody Street
Georgia
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2
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Phillip O'Neal

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ADS-Instruction & Research Complex/1503,1-L
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